

**CAPACITY BUILDING TO ENGOSENGIU WOMEN GROUP IN
IMPROVING LOCAL CHICKEN PRODUCTION IN PER URBAN OF
ARUSHA CITY- A CASE OF SOKON1 WARD AT ARUSHA CITY
COUNCIL -ARUSHA REGION**

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**A DISSERTATION SUBMITTED IN PARTIAL FULFILLMENT FOR THE
REQUIREMENTS FOR THE DEGREE OF MASTER IN COMMUNITY
ECONOMIC DEVELOPMENT IN THE OPENUNIVERSITY OF TANZANIA**

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CERTIFICATION

The undersigned certifies that has read and hereby recommends for acceptance by Open University of Tanzania a dissertation entitled "Capacity Building to Engosengiu Women group in Improving Local Chicken Production in Per Urban Of Arusha City- A case of Sokon1 ward at Arusha City Council -Arusha Region in partial fulfillment of the requirements for award of Master Degree in Community Economic Development (MCED).

.....
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Date

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DECLARATION

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Signature

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Date

DEDICATION

This work is dedicated with feeling of profound gratitude and affection to my husband, Wiseman and our lovely children Kennedy, Martin and Madeline whose inspiration kept me going. My parents, Martin and Perpetua Mvaa, brothers and sisters occupy a special place in this dedication for their warm words of encouragement and push to remain focused on the project to its successful conclusion.

Last, but not least in importance, to all those who strive for the Development of poor communities.

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ABSTRACT

Engosengiu Women Farmers' Group constitutes a number of 30 members with the potential of reaching a membership base of 200 in the very near future. The Group is located at Sokon 1 Ward, in Arusha City Council; it was formed with the aim of combining individual efforts to increase income of the family and to insure food security, the objective being to increase productivity and income level. During the community needs assessment carried out in 2013, it was revealed that low income was the main problem among the women who were involved in poultry production. Further analysis attributed this problem to lack of poultry husbandry and entrepreneurship skills. This project aimed at strengthening the Engosengiu women group through selected areas of capacity building (training) in order to hasten achievement of the desired benefits, which are primarily vested in increased income and food security.

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ABBREVIATIONS

AIDS	Acquire Immune Deficiency Syndrome
ASDP	Agriculture Sector Development Programme
CNA	Community Need Assessment
CBO	Community Base Organization
CED	Community Economic Development
SPSS	Statistical package for social science
PRA	Participatory rural appraisal
NGO	Non Governmental Organizations
HIV	Human infectious deficiency virus
CEDPA	Center for Development and Population Activities
IGA	Income Generating Activity
O &OD	Opportunity and Obstacles to Development
TFA	Tanzania Farmers Association
M&E	Monitoring and Evaluation

CHAPTER ONE

1.0 PARTICIPATORY NEEDS ASSESSMENT

1.1 General Introduction

Participatory needs assessment has long been an important community development tool. It identifies unmet needs in the community and provides evidence for support through various interventions and allows the community to participate in the process. It is both a process and a method. As a process, it can build leadership, group cohesion, and a sense of local involvement in the community (Israel et al, 1995), as a method, participatory needs assessment is a tool that helps a community plan for and implement strategies in development interventions.

The purpose of conducting the present community needs assessment was to identify areas of concern and major issues which the Sokon 1 Ward community as well as the Community Based Organisation (CBO) wish to address. The information was obtained through focus group discussions, survey, records reviews and observation. The information was gathered and analyzed based on the major problem identified.

1.1.1 Sokon 1Ward Profile

The name of the ward where the participatory needs assessment took place is Sokon 1 Ward. This is the ward with high population relative to other known wards in Arusha City Council.

1.1.1.1 Location and Size

Sokon 1 Ward is one among nineteen (19) wards of Arusha City council. It lies between Longitudes 34.5 ° – 38° degree East and Latitudes 2° - 6 ° south. The ward

headquarters lies 4 Km South west from clock tower along the Unga Limited via uhuru road. The Ward is situated in Elerai division within Arusha district in Arusha region. It has an area of 14.82 squares kilometers and is bordered by Terat ward in the southern part, Unga Limited Ward in the Northern part, and Lemara ward in the Eastern part.

1.1.1.2 Administration

There are 13 administrative streets namely Muriet, Sainavuno, Engosengiu, Madukani Lolovono, Lonongidong, Olovolos, Olmokea, Olnjavutian, Kanisani, Mlimani, olomokeya and Migungani.

1.1.1.3 Population

Sokon 1 Ward is one of the fastest growing Wards in Arusha City and has a population of 485,600 people (2012 population census).

1.1.1.4 Economic Activities

Major economic activities for people of this area are livestock keeping as well as vegetable production. A total of 2,952 Cows, 1,377 sheep, 1,185 goats, 4,150 pigs, 30,085 indigenous chicken, and 540 turkeys are kept in the ward. A large part of this area people depend on irrigation. The major sources of income for the residents of this ward who depend on agriculture are the sale of milk, vegetables, eggs and live chicken. Eighty percent (80%) of people who are engaged in agriculture are poultry keepers, of these 90% are women. Household income is mainly spent on buying clothes, children books, and paying school fees. Most of the food in the ward is purchased from the market.

The extra food is brought from central market, Kilombero within the City, and Mromboo-Mbuga ya chumvi market which is located in Arumeru district. The months when people experience shortage of food are January to April. The farm produce are obtained through irrigation along river Thembi, Burka and Naura. The rain fed crops such as maize and beans are planted in small plots of 0.25ha to 0.75ha in the lower lands. The difference in wealth is not big, relatively when compared to other parts of the City. Very few houses in the area are temporarily built with mud mixed with cow dung. The livestock keeping economy has been continuously affected by decrease of size of the land frequent occurrence of long droughts that make some of the keepers who keep indigenous cattle to migrate to other part of the country like Morogoro region searching for pasture and water, this social behavior of keeping large number of cattle has undergoes a natural death due to urbanization which is growing fast.

1.1.1.5 Social Services

Sokon 1 Ward has 7 Primary school and 19 kindergartens, 3 secondary schools (1-private and 2 Government) 2 private dispensaries and several feeder roads which are roughs road and much needs to be developed for the community.

1.1.1.6 Vegetation

Three natural vegetation zones can be identified from the ward are wooded grassland, bushed grassland and open grassland, all of which cover most of the southern part. Agriculture forms patches of different cropping patterns. Geological distribution of soil varieties includes red clay loams soil, black cotton soil (clay), and sandy loam.

1.1.1.7 Ethnicity

The main ethnic group of Sokon 1 community is the agro-pastoral namely Masai who forms the largest part of the local population, others are Wasambaa, Wameru, Wazigua, Wapare, Warangi, Wagogo, Wachaga, Wahaya, Wakamba, Waluguru ,and Wahehe.

1.2 Community Need Assessment

The concept of community needs assessment connotes a process by which an assessment of the current situation in the community is undertaken, value-based judgments regarding the preferred or desired situation are reached, and some determination of the priority status of local needs is made. The current researcher carried the assessment at Sokon 1 ward to fulfill the below objectives.

1.2.1 Objective

The main objective of this study was to examine the needs of poultry keepers in Sokon 1 Ward.

1.2.1.1 Specific Objectives

- 1) To identify major problem facing poultry production in Sokon 1 Ward at Arusha
- 2) To rank the identified problems based on priority

1.2.1.2 Research Question

- 1) What are the problems of poultry production Sokon 1 Ward?
- 2) What is the most pressing problem?

1.2.2 Research Methodologies

1.2.2.1 Target Population

The community here referred to as target population was identified through Arusha City council Department of Agriculture and Cooperative that works with several communities in enabling them to achieve their objectives. The selection of the Sokon 1 ward was based on a visit to the area of operation after consultation with Ward management. The researcher visited the ward and convinced that the ward is suitable for study. Two meetings were conducted with ward executive officers and their streets chair persons to solicit political will.

1.2.2.2 Research Design

Longitudinal surveys design was applied in which data were collected over a period of time was used in the current study, particularly a Cohort design. By using this design a group was studied over time though the people in a group with variation. This method was, particularly, useful in ascertaining the specific problems in poultry business, their needs and their sense of ownership. Both qualitative and quantitative methods were used to enrich the study, and to allow the collection of detailed information from the respondents in their social context. A quantitative method involves numerical surveys and experiments that record variation in social life in terms of categories that vary in amount were utilized.

Data treated as quantitatively and attributes were ordered in terms of magnitude. This method was selected because the researcher wanted to establish the magnitude of the problem facing poultry production in terms of numbers. On the other hand qualitative methods include participants' observation, intensive interviewing and focus groups

discussions that are designated to capture social life as participants experience other than in categories predetermined by the researcher. A qualitative research design was selected because it is a systematic process of discovering social interactions and understanding how they interrelate and influence their environment.

1.2.2.3 Sampling and Sample Size

Two sampling methods namely simple random sampling and accidental sampling were used. The sample was thus selected randomly from poultry keeping women group within Sokon 1 Ward. The sampling size was 30 out of 45 members of the group. Out of thirty sampled members 20 were randomly sampled and 10 were accidental sampled while doing home visits with ward extension staff in different household. Interviews or observations were made when people were available. This method best suited while doing home visits because most of the people visited were doing different activities such as farming and others feed livestock. Home visits were always done without prior communication with the families to be visited. This was purposely done because the researcher wanted to assess how families take care of their chicken. Prior-communication with the families to be visited could distort the reality because some family members would prepare a good /bad atmosphere to impress the team.

1.2.2.4 Data Collection Methods

1.2.2.4.1 Secondary Data Collection

This was done as an exploratory phase of the Community Needs Assessment. It assisted in getting initial ideas of the existing situation and hence formed the foundation of the CAN checklist .Literature review was done in order to gather some

information about poultry projects done in the same environment. The literature sources consulted for this study included documents from Arusha City Council-Department of Agriculture Livestock and cooperatives. United Nations documents on food security, national policies, documents on poultry production as a tool for poverty reduction, documents from bureau of statistics, reports from different partners and other books tackling poultry production issues in different communities. Other sources were the internet and Microsoft encyclopedias.

1.2.2.4.2 Primary Data Collection

This entails the actual field work for data collection in which several methods were used, to obtain fresh data from the Ward on the Research Problem.

1.2.2.4.2.1 Questionnaires

Questionnaires were designed and utilized in order to obtain specific information about the condition of poultry production in Sokon -1 Ward. The administered questionnaires had different types of question which focused on economic, social, Health and environmental issues. The questionnaire also aimed at gathering information on problems facing poultry production in the area, land availability in relation to type and number of livestock kept, sense of ownership, entrepreneurship skills and knowledge on poultry production.

1.2.2.4.2.2 Observation

Observation was one of the methods used by the researcher all the time to fetch information across the study area. This method focused much on conversations, non-verbal communication, general behavior of respondents and the environment in

general. In other words, the researcher was able to come in touch with the reality of poultry keepers in these communities. This method was chosen purposefully to compliment other methods, and especially, interviews. In addition to that in some circumstances people would shy off from interviews, and therefore, observation seemed the best data collection tool. Through observation, the researcher aimed at gathering more information on the conditions, facilities and services available in the area of study.

1.2.2.4.2.3 Focus Group Discussion

Focus group discussion was done in three groups each consisting of 10 individual respondents. The group composed of 10 community members. A focus group guide was prepared in order to enable the researcher to gather specific information from the participants across the Ward-poultry business.

1.2.2.5 Reliability of Data

- i. Information provided was measured by comparing information's of respondents among the member group and the physical observation method used to ascertain the reliability of the respondents.
- ii. After analyzing data the information obtained was critically viewed to test its validity and truthfulness of the data obtained from the respondents.
- iii. The data gathered were compared with the documented findings of other similar project carried within the country and elsewhere in the world.
- iv. The survey objectives were clearly defined to all stakeholders and the feedback questions showed that they appear to understand the objectives of the study intended for.

- v. Questions for both questionnaires and interviews were designed to reflect the need of the survey and were tested before and modified where it seemed necessary, to fulfill the core requirements of the current study.

1.2.2.6 Validity of the Data

- i. Information gathered during needs assessment was used as baseline source of information. In order to validate the data gathered, some other documents/literatures were reviewed on the same topic.
- ii. There has been adequate description and methods to establish reliability.

1.2.2.7 Data Analysis Methods

Data analysis means, "...tallying and averaging responses, looking at their relationships, and comparing them..." Both qualitative and quantitative data analysis methods were employed. Qualitative analysis involved presenting text or narrative data. Quantitative data analysis involved the use of scales of measurement and descriptive statistics which was done by using .X-Cell.

1.2.3 CAN Findings

1.2.3.1 Education Level

Results in Table 1 shows the education level of respondents involved in poultry keeping. The largest proportion of this community (47%) has the basic education, that is, primary level education and about quarter (33%) of the total sample have secondary level education. Less than 17% have tertiary level education and there is still a significant level of illiteracy within the community (3%). The findings generally show that, the community is still illiterate and the education level implies

the involvement of the majority of community members in informal activities but with limited know-how.

Table 1.1: Education Status of Respondents

Education level	Frequency	percentage	valid percentage	Cumulative percentage
Primary Education	14	47	47	47
Secondary Education	10	33	33	80
Informal Education	1	3	3	83
Post-Secondary	5	17	17	100
Total	30	100	100	

Source: Field Survey Findings, 2014

1.2.3.2 Economic Activities

Result in Table 2 shows different economic activities of respondent. The largest proportional of the community (60%) keep livestock as their income generating activities and about a quarter (27%) practice mix farming that is keeping livestock and practicing horticulture. About 10% of them practice horticulture and only 3% of this community are doing other economic activities which is not agriculture related. The finding generally shows that majority of this community depend much on livestock keeping and therefore more resources should be allocated for the development of this sector.

Table 1.2: Different economic activities of community members

Type of activity	Frequency	Percentage	Valid percentage	Commulative percentage
Livestock keeping	15	50	50	50
Livestock keeping and horticulture	6	20	20	70
Horticulture	8	27	27	97
Non Agricultural activities	1	3	3	100.0
Total	30	100.0	100.0	

Source: Field Survey Findings, 2014

1.2.3.3 Types of Livestock

Result in Table 3 shows different types of livestock kept by this community. Majority of the respondent 15 (50%) keep indigenous chicken and about 11 (37%) keep ruminants that is 8 (27%) dairy cows and another 3(10%)keep goats. Few of them 4 (13%) keep rabbits. The finding generally shows that poultry industry is a sensitive and area of more attention by this community relative to others.

Table 1.3: Types of Livestock.

Type of livestock	Frequency	Percentage	Valid percentage	Commutative percentage
Dairy cows	8	27	27	27
Dairy Goats	3	10	10	37
Rabbit	4	13	13	50
Indigenous Chicken	15	50	50	100.0
Total	30	100.0	100.0	

Source: Field Survey Findings, 2014

1.2.3.4 Common Killer Diseases

The common killer diseases of poultry in the study area are presented in Table 4. The largest proportional of the respondent 14 (47%), reported New castle (Kideri) as the most dangerous killer disease of poultry, 33% are killed by eye infection and flue killed 20% of poultry. The magnitude of the problem implies poultry keepers lose their capital {poultry) due to these major killer diseases.

Table 1.4: Common Killer Diseases of Poultry

Type of disease	Frequency	Percentage	Valid percentage	Commutative percentage
Eye Infection	10	33	33	33
New castle Disease	14	47	47	47
Flue	6	20	20	100
Total	30	100.0	100.0	

Source: Field Survey Findings, 2014

1.3 Identified Problem

Four problems were identified by the community members as summarized in Table 5. Of the four identified problems based on the pair-wise ranking which involved community members it was revealed that poor hatchability in indigenous chicken husbandry was the most pressing problem which underlies poor poultry production. Other problems are lack of entrepreneurship skills and existence of poultry diseases.

Table 1.5: Pair Wise Ranking of the Identified Community Problems

Identified problem	In adequate skills on poultry husbandry	In adequate education on entrepreneurship skills	Existence of poultry diseases	Poor hatchability	Score	ranking
In adequate skills on indigenous chicken husbandry		In adequate education on entrepreneurship skills	Existence of poultry diseases	Poor hatchability	1	4
In adequate education on entrepreneurship skills	In adequate education on entrepreneurship skills		In adequate education on entrepreneurship skills	Poor hatchability	3	2
Existence of poultry diseases	In adequate skills on poultry husbandry	Existence of poultry diseases		Poor hatchability	2	3
Poor hatchability	Poor hatchability	Poor hatchability	Poor hatchability		6	1

Source: Field Survey Findings, 2014

1.4 Conclusion

This chapter has explored on the community Needs Assessment Survey which was conducted in Sokon 1 Ward, Arusha City. The assessment shows that indigenous chicken keeping is the main income generating activity for women involved livestock keeping as a source of income in Sokon 1 Ward and the major identified problem that faces their project is the hatchability of eggs incubated by chicken in natural means.

CHAPTER TWO

2.0 PROBLEM IDENTIFICATION

2.1 Background to Research Problem

This chapter focuses on problem identification based on Community Needs Assessment (Group PRA) which was carried out in November 2014. It was from these results that the group members agreed that poor hatchability of eggs by natural method was the main problem they were facing in poultry keeping. Poor hatchability could lead to failure to production. It was from these findings that it was deemed important to impart appropriate techniques/skills on the members to alleviate the situation.

2.2 Problem Statement

Poultry husbandry can make a commercially profitable business and a home to be self-sufficiency provided that problem of hatchability is solved. Though Sokon 1 Ward community is highly dependent on poultry keeping for its livelihood, the business has been facing a lot of problems which include high price of day old chick. The underlying root cause of this is poor method used in hatching eggs which were also identified as the most pressing problem by community members (Table 1) which has existed for quite some time without being addressed. The current proposed project thus aims at equipping poultry farmers with incubator machine that will sustain their business and improve their livelihood through improved food security and income generation.

2.2.1 Project Description

The purpose of our project is to collaborate within group members across Engosengiu

group initiate to possess in possessing modern incubator machine for hatchery. There will be special attention to address the issue of disease control and prevention, nutrition and all aspects of poultry management.

2.2.2 Target Community

The project serves one woman groups (Engosengiu group).

2.2.2.1 Stakeholders

The community in collaboration with the researcher identified key stakeholders those who play significant role in community development who are: Timber mill, Ward Advisory Committee, and animal inputs shops. All these organization play a great role in its area of operation to contribute to the community sustainable development goals.

The following is the summary of their role in the communities.

Table 2.1: Stakeholder's Analysis

Name of stakeholder group/organization	Role in the project
Engosengiu Women Group	-Beneficiary of the project –They will offer time, ideas, physical and manpower
Arusha City Council	-Provide funds and 1 staff who will train the group members on feeds and feeds formulation.
Inno Vet Centre	-Technical support on disease and disease control, they support also some New castle vaccine
CED Student	-Coordinating, project writing; consolidate community idea for the benefit of the Project, participatory planning monitoring and evaluation.
SOKON 1ward (ward executive officer)	-Security and administrative support
Timber mill	-Provide timber services to the community Member group procure some timber from this miller
Seventh day dispensary	-Provide Health services to the member group The fact that it is the only Dispensary which is very near to them.
Animal input shops	-sell animal feeds and veterinary drugs to the community
Shops and kiosk	Purchase poultry and poultry products(eggs, live chicken for meat)

Source: Field work 2014

2.2.3 Project Goal

The Majority of community members particularly women are involved in poultry keeping as their main economic activity. However the business has been doing poorly because of the poor hatchability of eggs. This is also due to frequent occurrence of diseases which have been killing a lot of chicken and other husbandry related problem. To address this situation the current project goal is to train community members about poultry husbandry to equip them with the necessary skills for successfully undertaking the business. This will ensure proper husbandry practices and thus lower the poultry mortality, improve the general poultry husbandry, improve productivity and hence their income.

2.2.4 Project Objectives

2.2.4.1 Overall Objective

The overall objective is to equip poultry farmers with the general husbandry skills.

2.2.4.2 Specific Objectives

- 1) To train 30 members of Engosengiu women group on poultry nutrition by August 2014.
- 2) To train 30 members of Engosengiu women group on poultry disease control and prevention by September 2014.
- 3) To empower Engosengiu women group with 1 hatchery by September 2014.

2.3 Host Organization

The host organization for this project is the two Community Based Organizations (CBO) that is, Engosengiu Women groups. The groups were established in April

2013. The organization have the same Vision, Mission and Organization structures each group have 30 members each member run her own poultry project at their back yard. Their social capital, cohesiveness and willingness to learn are their greatest asset. The group leadership mastery of the groups dynamics and was able to motivate the members to desired goals. These groups drew support from Arusha City Council department of Agriculture and livestock development.

2.3.1 Organization Structure

The structure shows the group office bearers who were elected in 2013 and according to group's constitutional handout the new leaders would be elected in 3 years time. The general assembly is the annual member meeting and according to constitution the assembly would meet either at the end of the year or beginning of the next year.

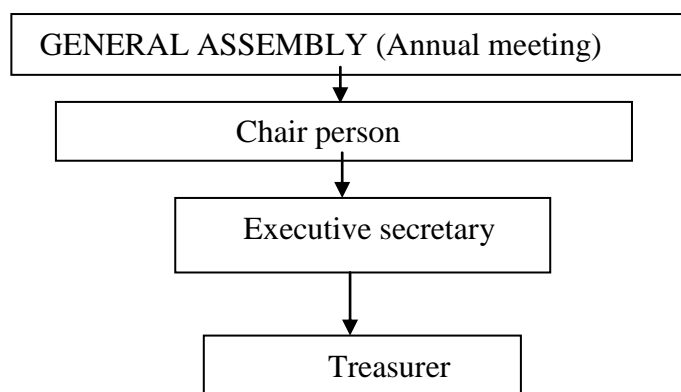


Figure 2.1: Organization Administrative Structure of the Group

2.3.1.1 Vision

Group members with a growing and sustainable economy.

2.3.1.2 Mission Statement

Engosengiu group's mission is to generate employment for increasing income and providing services and benefit the health safety and welfare of the group members.

2.3.1.3 SWOT Analysis on the Ward

Strength;

- i. Presence of land for agriculture
- ii. Experienced farmers in traditional farming
- iii. Well defined organization structure
- iv. Presence of farmer groups
- v. Farmers are eager to learn
- vi. Presence of indigenous chicken
- vii. Improved infrastructure
- viii. Adequate labor force
- ix. Presence of development spirit built among group members

Weakness;

- i. Lack of correct and update statistics
- ii. High illiteracy rate among member group
- iii. Poverty
- iv. Poor farming practices
- v. Lack of skills in poultry production
- vi. Lack of entrepreneurial skills among members

Opportunities;

- i. Adequate labor force within the area

- ii. Proximity to town market
- iii. Abundant streams and furrows for irrigation in the upper lands
- iv. Farmers eager to learn and adopt
- v. Existence of financial credit institutions near to the ward
- vi. Connection to farmer's forum-MVIWATA
- vii. Existence of NGOs
- viii. Committed leadership

Threats;

- i. Rapid population increase
- ii. Urban expansion into farm land
- iii. Pest and diseases
- iv. Soil erosion & gullies
- v. Agro pricing mechanism
- vi. HIV/AIDS and other pandemic
- vii. Culture and taboos
- viii. Policy changes
- ix. Unfavorable terms of credit.
- x. Drought

2.3.2 Role of Coordinator of CED student

- i. Making sure the project activities are implemented as according to the annual plan, budget approved.
- ii. Preparing monthly, quarterly, semi-annual and annual progressive and financial reports.

- iii. Controlling the efficiency and effective use of the finances.
- iv. Organize and network so as to solicit other sources of fund in order to intervene other un-reached areas of the community need
- v. Supervising group activities through collaborating with group treasurer and group committee
- vi. Preparing and presenting progress report of the project in the evaluation meetings which involves all stakeholders.
- vii. Any other duty as may be directed by his immediate supervisor

2.3.3 Role of the CBOs

- i. Act as main implementers of the project
- ii. Advice community to join the group
- iii. Solicit funds from potential donors
- iv. Maintaining group's cohesiveness for future sustainability of the Groups.
- v. Advising on group matter for better performance of the group.

CHAPTER THREE

3.0 LITERATURE REVIEW

3.1 Introduction

Literature Review is the body of text that aims to review the critical points of current knowledge including substantive findings as well as theoretical and methodological contributions to a particular topic. The function of a scientific literature review is primarily to collect and examine the state of current knowledge in a field by examining the work of scholars and researchers whose work have been recognized as valuable.

Ultimately, a well researched and written literature review accomplishes three goals. These are; establish context for researchers work by showing what has been done in the area Exposes the gap in current knowledge shows your supervisors that you have done your research. This chapter provides theoretical, empirical literature review and policy structure review on poultry project as income generating activities as well as problems facing poultry production in rural areas.

3.2 Theoretical Literature Review

3.2.1 Poultry Production as a Tool for Poverty Reduction

Gueye, 1998¹ describes that poverty, is both a cause and a consequence of inability to cope with shocks. The poor are often considered more vulnerable to shocks because of the assumed lack of diversification in their income and/or asset portfolio. In low income countries of Sub-Saharan Africa this vulnerability of the poor to various

¹ E.F. GUEYE. Reginal Animal Health centre for western and central Africa, B.P. 1820, Bamako, Mali (2000)

shocks is considered to be of most importance for policy targeting. In the limited livelihoods diversification that poor households tend to have livestock that constitutes an important source of income and in general comprises the most important asset to them.

Free range local chicken production is the one of which its numbers in Africa are increasing annually despite the threat of diseases such as Newcastle, Fowl typhoid and other problems such as poor management, endo-parasites and vermin attack. Boki (2000)² estimated the free range local chicken numbers in 1995 at 26 million, while for Kenya, Nyange (2000)³ estimated them to be 22 million for 1997. Also evidence shows that most consumers prefer free range local chicken than commercial ones derived from imported flocks and that free-range local chicken production fetch premium prices. For example, in Dar as Salaam, an indigenous chicken egg is sold at TShs 300 while that of a layer at between TShs 80 and TShs 100 and such eggs are plentiful in the streets Boki (2000)⁴.

Small scale poultry production systems either in the form of small semi- or fully scavenging household flocks or a slightly larger more intensive units have developed in a large number of developing countries around the world as a source of livelihood support for the rural poor. There is also growing evidence to demonstrate the role of small scale poultry in enhancing the food and nutrition security of the poorest households and in the promotion of gender equality (Mate, V.200)⁵.

²Kibari J. Boki. (2000)Poultry industry in Tanzania with emphasis on small scale rural poultry.

³Rophin K.Nyange(2001).Smallholder poultry production in Kenya

⁴Kibari J. Boki(2000)i.Poultry industry in Tanzania with emphasis on small scale rural poultry

⁵Belmira V.Mate (2000).small holder poultry production in Zimbabwe.

In many developing countries, poultry production is based mainly on traditional extensive poultry production systems (Sonaiya et al., 1998)⁶. All over the developing world these low input/low output husbandry systems have been a traditional component of small farms for centuries and are assumed to continue for the foreseeable future. It is estimated that 80 percent of the poultry population is found in traditional family-based poultry production systems, which contribute up to 90 percent of poultry products in some countries. Approximately 20 percent of the protein consumed in developing countries originates from poultry (i.e. meat and eggs). Yet, despite the importance of family poultry, relatively few field programmes have been initiated to improve the output.

Family poultry is an integrated component of nearly all rural, many peri-urban and some urban households and provides valuable protein and generates extra cash. All ethnic groups tend to be involved in family poultry production. Women, assisted in some cases by children, as they are the main owners and managers of family poultry. For instance, according to Guèye (1998b), more than 85% of rural families in sub-Saharan Africa keep one or more species of poultry, and more than 70% of chicken owners are women.

3.2.2 Management System

Four management sub-systems have been described by Bessei (1987) and Sonaiya (1990). There are the free-range system or traditional village system, the backyard (family or subsistence) system, the semi-intensive system and the intensive husbandry

⁶ Sanaiya, EB (1990), rural production system in Tanzania, presentation done in Africa Conference 1998.

system. The two first types are the most commonly practised in rural Africa Gueye (2000). There is no doubt that adoption of one or more management sub-system(s) is largely determined by the availability of resources and inputs i.e. housing, cages, feed, drugs and time. Also, these management sub-system(s) frequently overlap, thus, free range is sometimes coupled with feed supplementation, backyard with night confinement but without feeding; standard poultry cages in confined space, etc.

3.2.3 Problems Related to Poultry Production

The most striking problem in relation to poultry production is the high mortality: Mortality rates may be as high as 80-90% within the first year after hatching (Kyvsgaard, 1999)⁷. Traditionally, Newcastle disease is believed to be the most devastating disease in free-range systems and the main cause of the high mortality (Katule et al, 1990)⁸. However, many other factors affect the efficiency of poultry production either directly or indirectly. These include the genetic constitution of the host, nutrition (or malnutrition), environment, management, other diseases and societal pressures that can interact in multiple ways influencing the ultimate productivity level, the overall mortality rate and the quality of the final product (Calnek, 2005)⁹.

Successful poultry production also includes the possibility of obtaining loans for further investments and improvements of the production. In village production only small loans are needed, but they are mostly impossible for the producers to get, poultry production has the potential to become a considerable business. In particular,

⁷ Kyvsgaard, (1999), A general Review on Some Important Diseases in Free Range Chickens

⁸ Katule, A, M (2002), Production of local chickens under village management condition.

⁹ <http://www.uni-sz.bg>

it is unique among the livestock productions in respect to gender, as females often take care of these animals (Fattah, 1999)¹⁰.

3.2.4 Strategy for Family Poultry Development

To improve family productivity, and move from backyard to semi-intensive/commercial poultry production, a number of important constraints have to be overcome (Branckaert and Guèye, 1999)¹¹.

3.2.4.1 Disease Control

Newcastle disease (ND) constitutes the most serious epizootic poultry disease throughout the world, particularly in developing countries. No progress has been made in controlling ND in free ranging village flocks, which represent more than 80 percent of the total poultry population. For example, several surveys in Africa showed high rates of sero-positivity in the absence of vaccination. In developing countries, ND occurs every year and kills on an average 70-80 percent of the unvaccinated village hens. It is very difficult to organize vaccination campaigns covering free-range birds and the main constraints are: the difficulty of grouping together an adequate (large) number of birds in order to obtain an efficient vaccination rate; birds of various ages are usually raised together; and the need to maintain, at all stages, an efficient cold chain for proper vaccine conservation.

Furthermore the large number of farmers involved implies the need for considerable budgets (vaccines costs, transportation, refrigeration equipment, etc.) and makes

¹⁰FATTAH, KA (1999) Poultry as a tool in Poverty Eradication and Promotion of

Gender Equality. Poultry as a tool in Poverty Eradication and Promotion of Gender Equality

¹¹ R, D, S, Branckaert and E, F, Gueye, (2000) poultry as a tool in poverty reduction and promotion of gender equality, FAO programme proceedings for support poultry production.

actual vaccination programmes difficult to accomplish. In fact, planned vaccination programmes using existing commercial vaccines to control ND in village poultry have been successful, but the need for large labor and technical inputs has limited their efficiency. It should be kept in mind that, besides the vaccination, other general approaches can be used to control ND: hygiene, slaughter of infected birds and selection for resistance to the disease or for a better immunological response. Moreover, ND does not represent the only disease affecting family poultry. Consequently, the following activities are recommended: Epidemiological surveys at a regional level should be conducted in order to propose appropriate and low cost vaccination schemes. Based on the survey results, appropriate vaccination programmes have to be established. Training and use of parapets, preferably women, to undertake vaccination at group level.

3.2.4.2 Protection Against Various Predators

Predators such as snakes, rats, dogs, cats, foxes, raccoons, birds of prey represent the main causes of losses, especially in young birds. Human beings can also represent another important predator for adult birds! Prevention can be contemplated through the following measures: Proper housing that should be constructed using locally available materials. Predators should be trapped, hunted or repelled by specific plants. For example, in Nigeria, sliced garlic (*Allium sativum*) is placed around poultry houses to keep off snakes.

3.2.4.3 Feeding Mechanisms and Process

Careful attention should be given to ensuring adequate feed resources, which represent 60 to 80 percent of the economic inputs in the commercial poultry sector. It

is, therefore, not advisable to develop a wholly grain-based feeding system. The recommended policy is to identify and use locally available feed resources to formulate diets that are as balanced as possible. Research capacities must be strengthened to develop strategies to optimize locally available feed. Both conventional and alternative feed resources that are readily available to smallholder farmers should be identified.

Shrub leaves (*Leucaena* sp., *Calliandra* sp., *Sesbania* sp., etc.); aquatic plants (*Azolla* sp., water hyacinths, etc.), insects (termites), fruits (palm-oil fruit, papaya, guava, etc.), small animals (e.g. snails, earthworms), etc. can all be used as poultry feed. These products are rich in protein as well as vitamins and minerals and are all appropriate for supplementing diets of scavenging poultry. All these products, and the list is far from being exhaustive, are available in some parts of a country and during certain periods of the year; however, people must be skilled in using them properly. This implies the need for extension officers and farmers to be trained in the use of these alternative feed resources.

3.2.4.4 Family Poultry Farmers' Organizations

Organizing family farmers is not an easy task. There are several reasons. Flock sizes are small and birds are maintained with minimal land, labor and capital inputs. That means that farmers generally consider family poultry as secondary occupation compared with other activities in agriculture, trade, etc. Nevertheless, it is essential to: develop producers groups which will: allow the group members to have easier access to inputs: feed supplementation, improved birds, drugs and vaccines, technical advice, etc., and facilitate access to credit, training, transportation and marketing of poultry

products encourage educated people to initiate poultry farming as a secondary occupation, conducted at family level using medium-sized flocks, and develop associated activities like market gardening that can utilize poultry manure and help to reduce or remove household waste and pests.

3.2.4.5 Genetic Improvement

Indigenous or local breeds are generally raised in family poultry production systems. These birds are usually selected for their hardiness and sometimes for meat production, but not for egg production. Hens are thus poor layers; however they are good hatchers, except for guinea hens. When farmers contemplate to adopt a more intensive poultry production system, they are eager to purchase more productive birds. There is a need to find the best method to provide them with such birds and the options are: to supply hybrid strains which means the presence of well managed hatchery facilities and (grand) parent stock, or to supply purebred breeds which allow the farmer to renew his flock and to remain independent from external suppliers. Unfortunately purebred breeds are more and more difficult to purchase and produce less than hybrids.

However, poor hatching is commonly observed from hatcheries in many developing countries, especially in sub-Saharan Africa. Also, regular imports of hybrid parent stock must be carefully planned because usually there are many obstacles to overcome, e.g. purchase of importing licenses, obtaining hard currency, adequate shipment and transportation facilities, customs clearance and ensuring excellent conditions for the reception of birds, etc. Smallholder farmers cannot afford to carry out these operations themselves, while government structures have proved unreliable

and the private sector does not seem really interested. However, some solutions have proved to be efficient: Joint-ventures with multinational companies interested to distribute their own products,

Farmers Organizations that are able to provide their members with all necessary inputs, including imported birds .It is also possible to import less productive purebred and robust breeds for distribution to farmers, and allow them to conduct their own genetic improvement. However, many of these operations, like cock exchange programmes in the past have failed, essentially because there was a lack of proper and continuous monitoring and exotic birds did not survive under the harsh conditions prevailing in many developing countries. Therefore, it is recommended that indigenous stocks be studied and preserved.

3.2.4.6 Marketing Facilities

Poultry products in most developing countries, especially in Africa, are still expensive. The marketing system is generally informal and poorly developed. Unlike eggs and poultry meat from commercial birds derived from imported stocks, consumers generally prefer those from indigenous stocks. The existence of a local market offering good sales opportunities and adequate transport facilities are obvious prerequisites for family poultry development. As most consumers with the greater purchasing power live in cities, intensification of poultry production should be initiated in peri-urban areas or, at least, in areas having a good road network.

3.2.4.7 Training and Management

Technical skills need to be considered at both farmer and extension levels. Training is

essential for both farmers and extension officers in the following areas: disease control, housing and equipment, feeding, genetic improvement and marketing. A basic knowledge in specific features of poultry anatomy or physiology is also important to understand the basis of the above topics. Housing and management could be improved through appropriate farmer training, preferably conducted on-farm. Local craftsmen could be trained to manufacture small equipment, like feeders, drinkers, etc.

3.2.4.8 Hatchability

This is the number of eggs hatched from the total number incubated.

3.3 Empirical Review

3.3.1 Poultry Industry in Tanzania

The poultry industry in Tanzania comprises commercial poultry production with broilers and layers, and the traditional poultry production, which is sometimes called the scavenging or scratcher production, made up of various types and sizes of birds. The total number of poultry as estimated in the 1994/95 sample census of agriculture was about 30 million. Poultry production together with other small livestock contributes 5.4% to the total GDP. Poultry are the most evenly distributed in Tanzania because (Kibari Boki, 2000)¹²: They are not affected by tsetse flies which limits other stock like cattle; They are accepted by most religious groups (unlike pork which is not taken by Muslims); They multiply very fast; They are easy to dispose of (unlike cattle which if slaughtered for family use, need storage or refrigeration); They are easy to market and one gets money which can be used for other purposes; Poultry manure can

¹² Kibari, J, Boki, 2000 poultry industry in Tanzania with emphasize on small scale poultry projects.

be used as raw material for feed formulations, fed directly to fish, poultry manure is important for fertilizing soils and commonly used in gardens etc; and Poultry meat and eggs are good sources of protein.

3.3.1.1 Traditional Poultry Production (Kvan Velune, 1987) ¹³

Traditional or indigenous chickens are the most numerous of the domesticated chickens. According to the sample census of agriculture 1994/95 there was 26,385,506 indigenous. Chickens which supply 100% of the poultry meat and eggs in rural areas and 20% of the poultry meat and eggs consumed in urban areas. These birds are believed to have a low genetic potential for production but have the ability to survive under harsh conditions (scratch and scavenge to obtain their feed, poor housing, poor husbandry including disease control). They are normally kept in the backyard or in the house, let out in the morning and locked in during the night.

The average carcass weight is between 0.6 and 1.2 kilogram. Egg production is between 40 and 60 eggs per annum. All these birds are kept by smallholder farmers with flock sizes ranging from 10 to 30 birds per household. Efforts to improve the production and productivity of the indigenous chickens through upgrading started in 1937 when exotic breeds were introduced. In 1943, other upgrading programmes were initiated using cockerels imported from South Africa. The cockerels were reared for 10 weeks and sold to farmers. In 1982, the Food and Agricultural Organization (FAO) agreed to finance a programme for rural poultry. In 1986, an up-grading programme used imported Rhode Island Red and Barred Plymouth Rocks and sold them to farmers as a package to include males and females in several stations. The chicks

¹³ Kvan, Velune, 1987 traditional poultry keeping in Northern Ghana.

were normally reared up to 10 weeks. At farmers' level the pure breeds were let to mix with the indigenous birds and mate randomly. This approach had the following advantages:

The pure breeds could multiply under village conditions and act as a source of pure breeds to other farmers and also they could produce more meat and eggs than the indigenous birds;

- i. Pure indigenous birds will continue to be multiplied through crossing;
- ii. Several crosses will be produced which will produce more meat and eggs; and
- iii. There will be no need to introduce incubators at village level, as indigenous chickens will continue brooding. This programme stopped in 1989 when the FAO funding stopped. There has not been any follow-up on the actual field performance due to financial constraints. In 1998/99, a diversification programme of the Special Programme on Food production to improve household food security started to improve small stock including poultry. In this programme improvement of rural chicken is done through disease control particularly vaccination against Newcastle disease, proper housing, feeding, etc. in the regions of Morogoro and Dodoma.

3.3.1.2 Marketing of Poultry Products, (Mozi, 2003)¹⁴

Tanzania is a very big country with very poor infrastructure (roads, telecommunication). Movement of products from one place to another is therefore a major problem. Similarly, Marketing of poultry and poultry products in urban, peri-

¹⁴ Mozi et al, 2003, marketing of free range local chicken in Morogoro and Kilosa urban markets, Tanzania.

urban, and rural areas is a problem. Commercial poultry farmers for layers or broilers are disorganized and there is no proper marketing. A producer sells their products (eggs or live broilers) to consumers directly or through middlemen. It is worth noting that Tanzanians prefer to buy live chickens and slaughter at home; dressed and refrigerated meat is not commonly preferred. In rural areas, indigenous chickens are bought by middlemen who later transport them to market places or sell to urban consumers. Farmers also sell eggs and live poultry at local markets. In the village, households do slaughter their own chicken as well as consume some of the eggs, leaving the rest for hatching.

3.3.2 Case Study (1; Senegal (¹⁵Riise et al, 2001)

A unique collaboration between the Network for Smallholder Poultry Development, a Danish NGO, Bicycles for Senegal, and the Senegalese farmers' association, COLUFIFA (Comité de Lutte pour la Fin dela Faim) resulted in a highly successful pilot poultry project in seven villages in Casamance in Southern Senegal. As an immediate output of the project after 1.5 year the number of chickens has increased significantly, and, more important, the women have experienced more self-confidence and a higher social standing in their community. Now more than 200 women are involved in smallholder poultry activities, and numbers chickens and women involved are growing by the day.

The beneficiaries are among the poorest of the poor, and they have been selected through a participative process in each target village. Besides increasing the income

¹⁵ Riise,2000, strategies for developing family poultry production at village level, experience from West Africa

of the families, the project also aims at empowering the women and strengthening the capacity of their organization. Women received technical training (housing, feeding, health, and general management of the poultry) in order to be able to generate a small income from semi-scavenging poultry. After an introduction to savings, credit and marketing, they get access to a small credit of up to about 55 USD each. A very important part of the project is the organization of the women.

The 30 beneficiaries per village are divided into small groups of 5 in each with social collateral for the credit, and they meet once a week to discuss the problems encountered in the management of the chickens. A Farmer Field School approach is being used. The project is implemented by COLUFIFA, which has contracted local partners to undertake the training, the credit and the veterinary assistance. Besides, COLUFIFA has engaged in collaboration with the Senegalese Institute of Agricultural Research (ISRA) in Dakar.

3.4 Case Study 2 Solar Powered Incubator System in Budaka Uganda

Background

Despite a massive effort by donors during the last many years, the vast majority of the population in the developing countries is still living in rural areas with poor infrastructure and only limited access to water and power, and without these basic facilities, chances of economic development are minimal. One of the reasons being, that many donors have paid too little attention to the commercial challenges in comparison to the humanitarian problems. While fighting diseases, infant mortality etc. the population in countries like Tanzania has grown from 5-8 million by the time of their independence in the 1960's to approximately 35 - 40 million today, leaving a

big part of the population jobless with subsequent social problems. Especially in the rural areas only little development has taken place, and people are thus to a large degree still dependant on primary agriculture like arable farming and livestock.

One of the most common activities for many households is the rearing of poultry and production of table egg and broilers, which is also the most important source of protein in most countries. However, productivity of the local breeds is very low - partly because of inbreed, partly because of the brooding and also because the birds are scavenging and not fed properly. A local hen will typically only give about 40 eggs per year, whereas most other breeds, if reared properly, will yield 140 – 170 eggs per year.

The business case; Many of the above problems could be remedied if there were incubators in the villages which could facilitate the introduction of new genes like the dual-purpose **Kuroiler breed**, and which could secure that eggs could be collected and hatched under hygienic conditions; however, lack of power has so far prevented this. Agro business Development Ltd. has therefore over the last 2 years developed a solar powered incubator system, and a prototype has been successfully tested under various climate conditions in Denmark, Uganda and Kenya. The system can be operated by people without special skills, it requires very little maintenance and with a setting capacity of 144 eggs per week and a hatchability of 80%, it can produce about 6,000 day old chickens per year.

Apart from increasing productivity in terms of both quantity and quality of day-old chicks, the incubator will in general help facilitating the poultry “industry” in the area

which could lead to the upgrading of existing businesses or even the establishment of new ones: One business will be running the incubator system itself, another could be a farmer establishing a small scale parent stock for cross breeding indigenous breeds with improved or even introducing new ones like the Kuroiler, and other businesses could be farmers buying the day old chickens from the incubator and rearing them either as layers or broilers. Further a feed mill could be established for supplying quality feed to the whole chain.

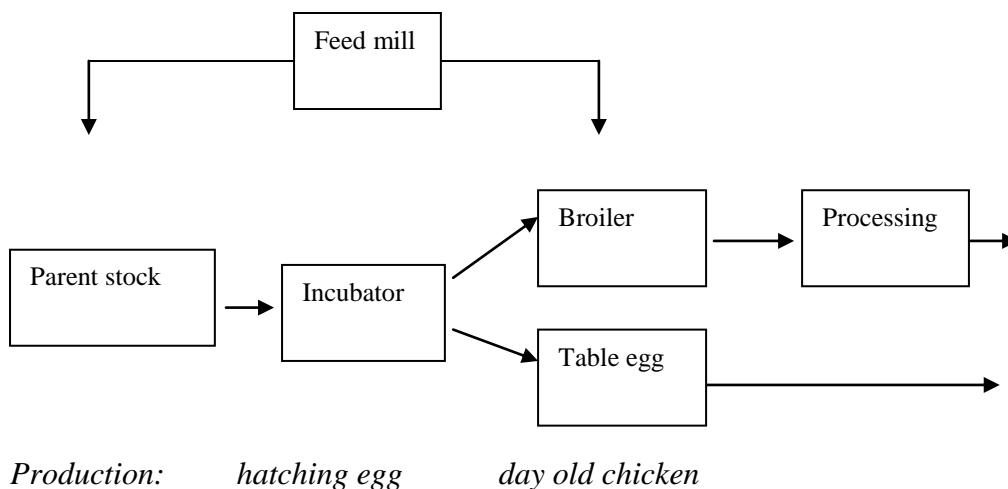


Figure 3.1: The Chicken Value Chain Analysis

Employment Opportunities and CSR Values; Establishing small scale businesses in rural areas will help eradicating poverty among people who otherwise have very few possibilities, if any, for increasing their income, and to this end an incubator can create a number of job opportunities. Especially if at the same time introducing a simple breeding program and some basic training, which can lead to a much higher productivity and increased production. It takes only one person to run the incubator itself; but if a household is buying 100 -200 day old chicks at a time for either producing broilers or for keeping layers, it could add significantly to the household

income. And with approx. 6,000 day old chickens /incubator/year, it means that 20-25 household will be able to undertake such a small business.

Thus several separate businesses can be derived from installing an incubator, and it will in many ways have a commercial impact on the wider community as increased production will lead to increased demand for raw materials for feed like maize and soya and thus benefit arable farmers, traders and service providers as well. Further it can be foreseen that the business case can lead to a multiple derived impact, as more money will be circulating and used for other businesses or services.

When it comes to Corporate Social Responsibilities the impacts will be many. First of all the business case will lead to a significant increase in employment opportunities both directly and indirectly, and as rearing of poultry often is left with the women to handle, the gender aspect will automatically be taken into consideration. As mentioned above the business case will in general have a direct positive impact on the wider community, also in securing food for the people at the bottom of the pyramid, and it is believed that increased employment opportunities and thus standard of living in many ways will lead to less social problems like drinking and wife battering. As the incubator will be powered by solar energy, the increased production can take place without any adverse impact on the external environment. On the contrary, increased production of poultry will increase the amount of organic manure which can be recycled and used for cash crops like tomatoes and vegetables.

Implementation and Training; In order to achieve the full impact of the incubator it is, however, necessary to help sourcing quality hatching eggs and offer some basic

training. Not so much regarding the incubator and solar energy system which requires a minimum of maintenance and management; but more when it comes to the rearing of chickens and composition of feed. Unfortunately, the public extension service has been reduced in many African countries, and most farmers have never been to agricultural college or taken any course in animal husbandry.

The idea is therefore to offer a total package solution which will include:

- i. Installation and running in of the plant,
- ii. Training of 20-30 farmers in poultry rearing and feed composition, and
- iii. Assistance in sourcing quality hatching eggs.

It will be organized by Agro business Development Ltd., who has many years of experience within the poultry industry in developing countries, and who has already identified suitable partners:

- i. A local company specializing in solar energy takes care of the installation and commissioning of the system, and it will further keep spare parts on stock, so the customers can feel confident about future service.
- ii. Another company, which has a parent stock farm, is taking care of training within poultry rearing and feed composition. Furthermore the company is looking into the possibility of help setting up regional breeder farms with the objective of cross breeding local chickens and/or introduces new breeds. The same company will also be in charge of supplies and distribution of vaccine, so that all the preconditions for an efficient production are met. In this context, it may be necessary to offer a mini fridge that can be linked directly to the batteries, as some vaccines must be kept cool.

Prices and Costs; The price for a system will of course vary depending on actual cost of transport and components and whether it might be possible to source some of the components locally at a more favorable price. But as an indication the price will be around USD 6,870 CIF, installed and commissioned; but without cost of clearing and local transport. A mini fridge can be offered as an optional accessory at a price of about USD 250-350, and cost of training of about 30 farmers will be in the range of USD 800 in total.

Technical Set-up;

The system comprises the following components:

- i. 1 Incubator
- ii. 4 solar panels mounted in array frame
- iii. 4 batteries (deep cycle solar batteries, closed type – no refilling) mounted in array frame
- iv. 1 inverter
- v. 1 charge controller
- vi. 1 battery monitor, cables and

The incubator is both a setter and a Hatcher with 6 automatic turning tilt trays for setting and 2 trays for hatching. The procedure is that the eggs are placed in the setting trays for 18 days and then moved to the hatching trays for the last 3 days, a production cycle in total of 21 days. Capacity of each setting tray is 72 eggs, and one can either set 72 eggs twice per week or 144 eggs once per week. Only maintenance of the system will be to clean the solar panels for dust now and then, and to refill a water bowl in the bottom of the machine for maintaining humidity.

What is important is to secure a temperature of 100 F all the time, which is easily done by adjusting the temperature button according to the thermometer. If above 100 F it might damage some of the eggs, whereas if the temperature drops below 100 F for some hours it will not destroy the eggs, just delay the hatching process. The incubator must be placed inside in shadow, if any windows blind them. The batteries can keep the incubator running for 2 consecutive days without sunshine assumed there is a continuous flow of eggs through the machine.



Figure 3.2: System installed in Budaka, Eastern Uganda in November 2012

Source: Researcher's Field Work, 2014

Notes: Solar Panels on the roof

An egg will need less and less heating as the embryo develops as it produces more and more heat itself, and toward the end of the production cycle it needs cooling. Thus a machine full of eggs where 144 eggs have been placed every week is more or less “in balance” when it comes to temperature, and the machine requires very little power to maintain the 100 F. Whereas if it is partly empty, it will use more power for

heating, especially when the outdoor temperature is low like during the night. Thus it is important to keep a steady flow through the machine, also for prolonging the life time of the batteries.



Figure 3.3: Inverter, Charge Control, Batteries with Monitor and Incubator

Source: Researcher's Field Work, 2014



Figure 3.4: A Poultry Farmer, Chicks and Eggs Enjoys Hatchability 95%

Source: Researcher's Field Work, 2014

A happy farmer with the first batch of day old chickens – 144 eggs were set and 137 day old chickens were hatched – a hatchability as high as 95%.

3.5 Policy Review

3.5.1 Women, Agriculture and Rural Development Fact Sheet Tanzania, FAO, 1995¹⁶

A new agricultural policy which was inaugurated in January 1997 was the result of four main reasons: the merger of agriculture and livestock policies; changes due to economic policy transformation; initiation of a new land policy that advocates changing land use patterns; and emphasis on environmental management and protection.

3.5.2 Agricultural and Livestock Policy 1997

According to Agricultural and Livestock Policy 1997, in the short and long term goal agriculture will continue to play a major role in the national economy. The policy deploys the need of review and analyses its sector performance with the view to identifying and removing constrain that prevent from making maximum contribution. The policy shows the key economics areas which are highly contributed by agriculture, this include country growth domestic product (GDP), export earning and employments in which the agriculture sector accounts for 60% and 84% respectively.

3.5.2.1 The Poultry Industry in Tanzania

The poultry industry in Tanzania is guided by the poultry policy of the year 2002, which insists on promotion of indigenous poultry breeding and development of the

20. FAO (1995). Women, Agriculture and Rural Development. Fact Sheet Tanzania

traditional flocks so as to exploit their production potential. The poultry industry in Tanzania is categorized according to the type of production as traditional and commercial production systems. The traditional system is the largest contributing to more than 50% of the flock, supplying most of the poultry meat and eggs consumed in rural and about 20% in urban areas. The common indigenous chicken types include Kuchi, Kishingo, Sukuma, Kinyavu and Kiduchu. Poultry kept in the traditional system offers the potential for a relatively quick increase in productivity through the introduction of improved husbandry practices, technical support services, diseases control and breeding.

Commercial poultry production is mostly practiced in urban and peri urban areas where they are confined. Productivity levels in the commercial poultry production system, which produces most of the poultry meat and eggs for urban consumers, are constrained by disease, poor quality feeds and weak enforcement of hatchery regulations. The policy objective is to increase quantity and improve quality of poultry and its products to satisfy domestic demand, increase export and promote sustainable poultry production. The policy further stipulates that development of traditional flocks and indigenous poultry breeding shall be promoted.

3.5.3 Agricultural Sector Development Strategy 2001

According to national Agricultural Sector Development Strategy 2001(ASDS)¹⁷, it highlighted some of the agricultural sector challenges which include low productivity, poor coordination and limited capacity, underdeveloped supporting facilities, erosion of the natural resource base, in appropriate technology, dependency on rain fed

¹⁷ Tanzania development strategy 2001

agriculture and access to food markets. The strategy indicated the possibility of the country to increase agriculture products such wheat and rice as the means to replace imports and expand food and livestock exports to neighbor countries. The strategic (ASDS) document puts forward the need of increase private sector participation and agriculture development in general by creating the favorable climate for commercial activities. The government aims at devising appropriate investment incentives for agriculture sector harmonize and publicize the agricultural sector legislation and that of collaborating sectors; provide legal empowerment for stakeholders to control commodity boards; legalize and promote cross-border trade; streamline procedures for legal access to land and undertake land demarcation and surveys in agricultural investment zones.

3.5.4 Community Development Policy (Sera Ya Taifa Ya Uwezeshaji Wa Wananchi Kiuchumi 2004)

According to Sera Ya Taifa Ya Uwezeshaji Wa Wananchi Kiuchumi 2004, (Community Development Policy), the land was stated as ineffectively utilized to enable the citizen to fully participate in economic development. For this reason the Government will utilize the land by enabling her citizen to increase their income and access share through land in order to actively involve in economic development. The strategies to be used include developing infrastructure in arable land so that it will be used for agriculture production. Also to develop infrastructure which will accommodate agriculture, livestock, business and other economic development activities? The Government also intends to enable the farmers and other land users to access the credits through land.

3.5.5 Community Development Policy 1996

Community Development Policy, 1996¹⁸, aims at enabling Tanzanians to bring about their own development by working to improve production so that they may have increased income which will enable communities to build a better life through self reliance and use of locally available resources. It acknowledges this approach as the major way to eradicate poverty. The policy focusing areas include eradicate poverty through involving those responsible for bringing about community development by advising and training individual families and households, encouraging groups or cooperative productive activities. It also focus on responding to and meeting the need of special groups of women, children and youth in order to reduce their work load, strengthen family income generating projects and enable them to participate in decisions and ownership of family property

3.5.6 The National Strategy for Growth and Reduction of Poverty. (NSGRP) or (MKUKUTA)

MKUKUTA (Mkakati wa kukuza Uchumi na Kupunguza Umaskini Tanzania) was approved by the cabinet of Tanzania in February 2005 for implementation over five years. MKUKUTA says that "the small and medium scale enterprises (SMEs) lack Financing; technical and managerial skills; infrastructure; market information; and contacts with external markets. Rural areas lack road networks and telecommunications hence constraints markets, foreign and domestic trade, employment and restricts access to social services. The strategy identifies three clusters one of them is growth and reduction of income poverty; this cluster supports

¹⁸ Tanzania community development policy 2006

objectives of the poultry project. The cluster focuses on scaling up investments towards modernizing small, medium and large scale agricultural enterprises, promoting off-farm activities including Small and Medium size Enterprises with emphasis on agro-processing, and promoting more sustainable use of natural resources for the benefit of poor communities. The strategy gives attention to trade, services and markets, infrastructure, and creating conducive environment to attract private investments. Internationally, the project objectives go in line with the millennium Development Goals - goal I eradicate extreme poverty and hunger:

- i. Reduce by half the proportion of people living on less than a dollar a day.
- ii. Reduce by half the proportion of people who suffer from hunger.

3.5.7 The Tanzania Development Vision 2025

The vision come to being after the realization that, the country need to develop itself in all areas in order to be active participants as the nation in a global development world characterized with advance technology, high productivity, modern and efficient transportation and communication infrastructure. The Development vision objectives include achieving quality and good life for all; good governance and the rule of law; and building a strong and resilient economy that can effectively withstand global competition.

The national development vision deploys the intent of being people centered. It consider the national development as fact in which wealth are created and distributed freely from inequalities and all forms of social and political relations which inhibits empowerment and effective democratic and popular participation of all social groups in society. The government committed to create the situation so as to foster economic

transformation from a low productivity agricultural economy to a semi-industrialized one and highly productive agricultural activities which are affectively integrated and buttressed by supportive industrial and service activities in the urban and rural areas.

3.5.8 The Big Result Now

Tanzania Government adopting the Malaysia Model Of Development which working under specific timeframe for delivery of the step change required focused in six priority areas of economy which are Energy and Natural gas, Agricultural, Water, Education, Transport and Mobilization of Resources. This model beginning on the government budget 2013/14, efforts to transition the country from the low to middle income economy. This model considers availability of all resources needed and its use participatory approach.

3.5.9 Summary of Policy Review

Due to the supportive policy on the agriculture and livestock the Engosengiu Group members and the whole community of Sokon 1 ward are in the position to access and utilize the opportunity for poverty alleviation through the implementation of income generating activities in agriculture and livestock. Unless there are viable ways of introducing appropriate technology and approach to improve and run income generating activities on agricultural and livestock, the situation may worsen in the future for Engosengiu women group and poultry keepers community as whole. Due to the fact that income generating activities are practical and proved to work in different parts of the world, then small groups for women at Sokon 1 community will be able to run their income generating activities for agriculture, livestock and other small business for poverty alleviation and improve their standard o living.

CHAPTER FOUR

4.0 IMPLEMENTATION

4.1 Introduction

Implementation means carrying out what has been planned. In implementing this project implementation plan was followed as guidance. The plan consisted of objectives with corresponding activities, timeframe, and resources needed and responsible persons. The plan which guided the implementation was developed in which financial, material resources and human resources were inevitable for the successful implementation of the project. Project budget was contributed by the Arusha City Council under Community Development Department Women Section and, community members.

4.2 Project Products and Output

The projects main products and outputs are as follows

- i. Improved skills to poultry husbandry.
- ii. Improved skills in poultry nutrition.
- iii. Improved skills in poultry diseases and diseases control.
- iv. Increased productivity
- v. Increased income
- vi. Improved wellbeing

4.3 Project Planning

Project planning is the central component in the project development process. The project planning involved the following major steps: Identifying activities, sequencing activities, developing timeframe for activities. And assigning responsibilities for

carrying out the activities lastly but not list is assessing facilities equipments and service needed.

i. Identifying Activities

Identifying project activities is the most important step in the project-planning phase. Time and effort invested in this specific step guaranteed the success achieved. Identification project activities were carried out in a participatory way by involving all the CBO members basing on the project objectives and taking into consideration the resource and constraints.

ii. Sequencing activities

After having identified the activities then they were sorted out as some of them had to be completed before others source of the activities had to conducted concurrently with others. Hence sequencing them was imperative.

iii. Time frame

After identifying and sequencing activities of the project, the next task was to determine the duration of the activity by determining the activity start date completion date.

iv. Assigning responsibilities

Assigning Responsibilities for different activities to specific individuals was done in a systematic manner involving all the CBO members. The criteria for assignment of the tasks were the individuals' possessed skills and the demands of the activity.

v. Facilities, Equipments, Materials and Services.

Carrying out activities of project requires various kinds of facilities, equipment materials and services. The communities' members have agreed collectively to

determine the facilities and services needed for each activity in the project.

vi. Preparation of the Budget

Preparation of budget is critical in project planning. A budget is generally a statement of income and expenditure. In community development projects budgets can take many forms. In certain projects, priority is given to preparing an estimate of expenditure for project activities, because the money will be provided by a funding agency or a development organization. However in this particular project the funder where CED student and CBO members.

Table 4.1 Project Logical Framework

Narrative Summary	Indicators	Means of Verification	Assumption /Risks
GOAL Income at house hold level improved through poultry husbandry training to improve indigenous chicken production	The targeted members of Engosengiu Women groups are enjoying good production (eggs, meat) of indigenous chicken and earn reasonable income.	<ul style="list-style-type: none"> Progress report Poultry keepers daily report 	Community is willing to adopt new techniques in indigenous chicken production
Objective 1 Thirty(30) members for Engosengiu women group trained on poultry nutrition by December 2014	Number of group members for Engosengiu Women group practicing principles of poultry nutrition i.e., feed formulation and feeding Increase in egg production	<ul style="list-style-type: none"> Poultry keepers daily reports Group report 	Political will from leaders is guaranteed
Objectives 2 Thirty(30) members for Engosengiu women groups trained on disease control and prevention by December 2014	Decrease in baby chicks mortality rates	<ul style="list-style-type: none"> Poultry keepers daily reports Group report 	Political will from leaders is guaranteed
Objective3 Thirty (30) members for Engosengiu women groups trained on management of poultry as indigenous and cross breeds chicken by December 2014.	Number of cross breeds chicken Number of improved chicken houses	<ul style="list-style-type: none"> Poultry keepers daily reports Group report 	No change of climatic conditions
Output 1: Poor production of indigenous chicken due to	Output 1: 1.1 At list every member	<ul style="list-style-type: none"> Poultry keepers record Group report 	

Narrative Summary	Indicators	Means of Verification	Assumption /Risks
<p>poor nutrition is minimized</p> <p>Main Activities to Output 1 1.1 Training on local available resources as feed ingredients 1.2 Theoretical training on composition of cost effective feed formulation utilizing locally raw material.</p>	<p>group formulate their own poultry feed.</p>		
<p>Output 2 Community awareness of preventive and curative measures in dealing with poultry diseases.</p> <p>Main Activities to Output 2 1.1 Theoretical training on the types and signs of common poultry diseases 2.1 Training on importance of vaccination</p>	<p>Output 2 2.1 30 members trained on poultry disease and disease control. 2.2 At list 67% decrease of baby chicks mortality at age of three 2.3 At list 98% of the members practice vaccination against New Castle diseases.</p>		<p>Existence of Close supervision of livestock department.</p>
<p>Output 3 Engosengiu women groups members have Skills on management of poultry as indigenous chicken</p> <p>Main activities to Output 3 1.1 Training on production systems 1.2 Training on local breeds and their performances under different management systems 1.3 Training on baby chick management 1.4 Training on general hygienic measures 1.5 Conducting training on breeds selection and breeding program</p>	<p>Output 3 At list 60% of member group have improve chicken houses suitable for indigenous chicken. At list 40% of Engosengiu women groups have procurer improved indigenous cockerels to crossbreed with the local breeds.</p>	<p>Poultry keepers record Monitoring report</p>	

4.3.1 Project Implementation Plan

Table 4.2: Project Implementation Plan

Specific objective	Activities	Project month												Resources Needed	Person responsible	
		1	2	3	4	5	6	7	8	9	10	11	12			
1.To train 30 members for Engosengiu women groups on poultry nutrition by February 2014	<ul style="list-style-type: none"> Preparation of training manuals Training on available feed resources and feed ingredients 	v	v												Stationeries, resource person Feed resources	CED student, project, ward extension officer
	<ul style="list-style-type: none"> Theoretical training on poultry nutrition Determining the nutritional value of locally produced raw materials suitable for use in feed production 			v	v										Stationeries, tea and refreshment	CED student, ward extension officer
	<ul style="list-style-type: none"> Training on composition of cost effective feed formulas utilizing locally produced raw materials 				v										Animal feeds	CED student, Ward extension officer

Specific objective	Activities	Project month												Resources Needed	Person responsible	
		1	2	3	4	5	6	7	8	9	10	11	12			
	<ul style="list-style-type: none"> • Training on feeding and feeding regime 				v	v									Resource person, stationeries, beam balance/weigh scale,	CED student
2.To train 30 members of Engosengiu women groups on disease control and prevention by December 2014	<ul style="list-style-type: none"> • Preparation of learning materials/Notes /venue 									v				Stationeries, resource person, funds	CED student, Group members	
	<ul style="list-style-type: none"> • Theoretical training on the types and signs of common poultry diseases 									v				Stationaries,tea and refreshment funds	CED student, Group members	
	<ul style="list-style-type: none"> • Training on the control and prevention of diseases 											V		Transport	CED student, Group members	
	<ul style="list-style-type: none"> • Training on the importance of vaccination. 									v	v	v	v	Resource person, vaccine	CED student, Group members	
3.To train Thirty (30) members of Engosengiu women group on the procedures for the management of poultry as indigenous and	Preparation of learning materials/Notes /venue													Stationaries, resource person	CED student, project	
	<ul style="list-style-type: none"> • Training on basic requirements for 										v	v	v	Stationeries, tea and refreshment	Project committee CED student, ward extension officer	

Specific objective	Activities	Project month												Resources Needed	Person responsible		
		1	2	3	4	5	6	7	8	9	10	11	12				
cross breeds chicken by December 2014	poultry housing																
	<ul style="list-style-type: none"> • Training on production systems • Training on local breeds and their performances under different management systems • Training on baby chick management • Training on general hygienic measures 											v	v	v	Fuel(petrol) Stationeries Timber Brooding material(saw dust) Ceiling board	CED student, Ward extension officer	
	Conducting training on breeds selection and breeding program												v	v	v	stationeries	CED student, Ward extension officer

Table 4.3: Inputs

SPECIFIC OBJECTIVES	ACTIVITY	INPUT	UNITY MEASURE	NUMBER OF UNITS	UNIT COST	TOTAL COST
1.To train 30 members for Engosengiu women groups on poultry nutrition by February 2014	Preparation of training manual	petrol	lts	10	2,100	21,000
		note books	each	60	900	54,000
		refreshments	pack	60	2,000	120,000
		extra duty allowance	Personal days	2	20,000	40,000
	Training on available resources and feed ingredients	counter books	each	60	3,000	180,000
		bal pen	dozen	3	7,500	22,500
		refreshments	pack	60	2,000	120,000
		Facilitator allowance	man days	2	80,000	160,000
		photocopies	each	120	100	12,000
	2.To train 30 members of Engosengiu women groups on disease control and prevention by December 2014	Theoretical training on poultry nutrition and determination of nutritional value	Petrol	lts	10	2,100
flip chart (bundle)			each	2	9,000	18,000
Extra duty			Personal days	5	20,000	100,000
Cotton seed cake			Kg	5	800	4,000
Fish meal			Kg	10	2,000	20,000
Mineral salt			Kg	10	300	3,000
Leaf meal			Kg	2	1,400	2,800
Maize bran			kg	50	600	30,000
Sun flower cake			kg	15	600	9,000
Training on composition of cost effective feed formula		Petrol	lts	10	2100	21,000
		flip chart	each	2	9000	18,000
		Extra duty	Personal days	5	20,000	100,000
		Cotton seed cake	Kg	5	800	4,000

SPECIFIC OBJECTIVES	ACTIVITY	INPUT	UNITY MEASURE	NUMBER OF UNITS	UNIT COST	TOTAL COST
	utilizing locally raw material suitable for feed production	Fish meal	Kg	10	2,000	20,000
		Mineral salt	Kg	10	300	3,000
		Leaf meal	Kg	2	1,400	2,800
		Maize bran	kg	50	600	30,000
		Sun flower cake	kg	15	600	9,000
3.To train Thirty (30) members of Engosengiu women group on the procedures for the management of poultry as indigenous and cross breeds chicken by December 2014	Preparation of learning material/notes and venue	Stationeries	Pack	1	100,000	100,000
		Extra duty allowance	Man days	2	20,000	40,000
	Theoretical training on the types and signs of common poultry diseases	refreshments	pack	60	2,000	120,000
		facilitator	man days	2	80,000	160,000
		photocopies	each	120	100	12,000
		petrol	lts	10	2,100	21,000
		flip chart	Each	2	9,000	18,000
	Training on the control and prevention of livestock diseases	bal pen	dozen	3	7,500	22,500
		refreshments	Pack	60	2,000	120,000
		facilitator	man-day's	2	80,000	160,000
		photocopies	Each	120	100	12,000
		petrol	Lts	10	2,100	21,000
	Training on importance of vaccination	Stationeries	Pack	1	100,000	100,000
		New castle vaccine	vials	10	4,000	40,000

SPECIFIC OBJECTIVES	ACTIVITY	INPUT	UNITY MEASURE	NUMBER OF UNITS	UNIT COST	TOTAL COST
		refreshments	Pack	60	2,000	120,000
		Facilitator allowance	man days	2	80,000	160,000
		photocopies	Each	120	100	12,000
		Petrol	Lts	10	2100	21,000
		Colored pictures	Each	12	3000	36,000
	Training on conducting breeding program	stationeries	pack	1	100,000	100,000
		Facilitator allowance	Personal days	2	80,000	160,000
		Tea	person	60	2,000	120,000
	Training on production systems ,local breeds and per romance under different systems	stationeries	pack	1	100,000	100,000
		Extra duty allowance	Personal days	2	20,000	40,000
	Training on baby chicks management	In boxes	Each	1	75,000	75,000
		Ceiling board	Pc	1	23,000	23,000
		Saw dust	bag	1	5,000	5,000
	Total Amount					3,099,600

4.3.2 Staffing Pattern

4.3.2.1 Staffing Plan

Implementation of the project lies upon the CBO members, assisted by the CED student. All together were participating fully in implementing the project.

4.3.2.2 Training Needs

All CBO members performing daily duties are scheduled to be trained in poultry husbandry.

4.3.3 Project budget

Table 4.4: Project Budget

SPECIFIC OBJECTIVES	ACTIVITY	INPUT	UNITY MEASURE	NUMBER OF UNITS	UNIT COST	TOTAL COST
1.To train 30 members for Engosengiu women groups on poultry nutrition by February 2014	Preparation of training manual	petrol	lts	10	2,100	21,000
		note books	each	60	900	54,000
		refreshments	pack	60	2,000	120,000
		extra duty allowance	Personal days	2	20,000	40,000
	Training on available resources and feed ingredients	counter books	each	60	3,000	180,000
		bal pen	dozen	3	7,500	22,500
		refreshments	pack	60	2,000	120,000
		Facilitator allowance	man days	2	80,000	160,000
		photocopies	each	120	100	12,000
	Theoretical training on poultry nutrition and determination of nutritional value	Petrol	lts	10	2,100	21,000
		flip chart	Each bundle	2	9,000	18,000
		Extra duty	Personal days	5	20,000	100,000
		Cotton seed cake	Kg	5	800	4,000
		Fish meal	Kg	10	2,000	20,000
		Mineral salt	Kg	10	300	3,000
		Leaf meal	Kg	2	1,400	2,800
		Maize bran	kg	50	600	30,000
		Sun flower cake	kg	15	600	9,000
	Training on	Petrol	lts	10	2,100	21,000

SPECIFIC OBJECTIVES	ACTIVITY	INPUT	UNITY MEASURE	NUMBER OF UNITS	UNIT COST	TOTAL COST
	composition of cost effective feed formula utilizing locally raw material suitable for feed production	flip chart	each	2	9,000	18,000
		Extra duty	Personal days	5	20,000	100,000
		Cotton seed cake	Kg	5	800	4,000
		Fish meal	Kg	10	2,000	20,000
		Mineral salt	Kg	10	300	3,000
		Leaf meal	Kg	2	1,400	2,800
		Maize bran	kg	50	600	30,000
		Sun flower cake	kg	15	600	9,000
						Subtotal (1)
2.To train 30 members of Engosengiu women groups on disease control and prevention by December 2014	Preparation of learning material/notes and venue	Stationeries	Pack	1	100,000	100,000
		Extra duty allowance	Man days	2	20,000	40,000
	Theoretical training on the types and signs of common poultry diseases	refreshments	pack	60	2,000	120,000
		facilitator	man days	2	80,000	160,000
		photocopies	each	120	100	12,000
		petrol	lts	10	2,100	21,000
	Training on the control and prevention of livestock diseases	flip chart	Each	2	9,000	18,000
		bal pen	dozen	3	7,500	22,500
		refreshments	Pack	60	2,000	120,000
		facilitator	man-day's	2	80,000	160,000
		photocopies	Each	120	100	12,000
	Training on importance of vaccination	petrol	Lts	10	2,100	21,000
		flip chart	Each	2	9,000	18,000
		Stationeries	Pack	1	100,000	100,000
		New castle vaccine	vials	10	5,000	50,000
Other vaccine		lump sum	1	100,000	100,000	
				Sub total	1,074,500	
3.To train Thirty (30) members of Engosengiu women group on the procedures for the management of poultry as indigenous and cross breeds chicken by December 2014	Training on basic requirements for poultry housing	bal pen	dozen	3	7,500	22,500
		refreshments	Pack	60	2,000	120,000
		Facilitator allowance	man days	2	80,000	160,000
		photocopies	Each	120	100	12,000
		Petrol	Lts	10	2,100	21,000
		Colored pictures	Each	12	3,000	36,000
	Training on conducting breeding program	stationeries	pack	1	100,000	100,000
		Facilitator	Personal	2	80,000	160,000

SPECIFIC OBJECTIVES	ACTIVITY	INPUT	UNITY MEASURE	NUMBER OF UNITS	UNIT COST	TOTAL COST
		allowance	days			
		Tea	person	60	2,000	120,000
	Training on production systems ,local breeds and performance under different systems	stationeries	pack	1	100,000	100,000
		Extra duty allowance	Personal days	2	20,000	40,000
	Training on baby chicks management	In boxes	Each	1	75,000	75,000
		Ceiling board	Pc	1	23,000	23,000
		Saw dust	bag	1	5,000	5,000
					Sub total	994,500
					Grand total	3.214.100

4.4 Project Implementation

The life cycle of a community development project consists of three major phases: Planning, implementation and evaluation. Implementation means carrying out what has been planned. Among the major activities in project implementation are securing community participation, coordination of activities, monitoring and taking care of contingency situation. Constant coordination has been done to prevent duplication of activities, to promote efficiency and to reduce costs. Monitoring was carried out for checking whether the work is proceeding according to the plan, and in case of shortcomings to take stock of the situation and effect the necessary correction actions.

4.4.1 Project Implementation Process

The project implementation had one major implementation area namely training on indigenous chicken improvement for the CBO members.

Training was done to all 30 members of the CBO. The members were trained on indigenous husbandry; the training was based on scientific ways of indigenous rearing, poultry diseases and disease control, indigenous chicken nutrition, breeds and breeding.

4.4.1.1 Accomplishment of the Goals and Objectives

The members of the CBO now are practice skills in indigenous chicken production. The municipal residents prefer indigenous poultry so accessibility to a reliable and sustainable market for the poultry project products is available. Members of these CBOs are able to diagnose diseases which affect their poultry and therefore they carry out initial treatments measures, they also identify eggs for brooding and carry out breeding programme.

4.4.2 Project Implementation Gantt chart

A Gantt chart is a type of bar chart that illustrates a project schedule. Gantt charts illustrate the start and finish dates of the terminal elements and summary elements of a project. Terminal elements and summary elements comprise the work breakdown structure of the project. Gantt charts can be used to show current Schedule status using percent-complete shadings and a vertical.

ID No.	Activity	Duration	2013				2014								Resources	Responsible person	
			Sept	Oct	Nov	Dec	Jan	Feb.	Mar	Apr	May	Jun	Jul	Aug			Sep
	training needs, • identification of training resources, • mobilization of resources, • preparation of training materials, • identification of training venue	1 month					→									Stationeries, tea	Identified community members, CED student
3.	Project implementation	4 months							→						Stationeries, facilitators allowances, animal feeds, poultry ,building and construction materials, fuel	CED student, Safina and Shalom Women groups	

ID No.	Activity	Duration	2013				2014							Resources	Responsible person		
			Sept	Oct	Nov	Dec	Jan	Feb.	Mar	Apr	May	Jun	Jul			Aug	Sep
	Conducting training on poultry nutrition feed regime, feed and feed formulation, cost effective feed formula.	1 month					→									Facilitator allowance, animal feeds	BRAC foundation, CED student
	Conducting training on disease control and prevention	2 month						→	→							Stationeries	BRAC foundation, CED student, project committee members
	Training on importance of vaccination	1 month									→					New castle vaccine, facilitator ,fuel	BRAC foundation
	Training on production systems ,local breeds and performance under different systems	1 month								→						stationeries, facilitator,	CED student
	Training on basic requirements for poultry housing	2									→	→				Stationeries, facilitator, fuel, brooder making	CED student

ID No.	Activity	Duration	2013				2014							Resources	Responsible person		
			Sept	Oct	Nov	Dec	Jan	Feb.	Mar	Apr	May	Jun	Jul			Aug	Sep
																materials	
	Training on baby chicks management	1 month								→						In boxes Ceiling board Sisal Twine, Saw Dust	CED student
	Participatory monitoring & evaluation	continuous					→	→	→	→	→	→	→	→	→	Transport cost, stationeries	CED student
	Project report writing								→	→	→	→	→	→	→	Stationeries, photocopying cost.	

CHAPTER FIVE

5.0 PROJECT PARTICIPATORY MONITORING, EVALUTION AND SUSTAINABILITY

5.1 Introductions

At the end of the quarter the format for participatory monitoring and evaluation is used to compare the planned with the actual achievement and evaluate them. In this study monitoring of project activities was done to assess whether the project activities were conducted as planned and if the available recourses were used efficiently during the project implementation. Monitoring provides the management with current situation, identify the implementation problems and find solutions, discover trends and pattern, keep project activities on schedule, measure progress towards achievement of project objectives. It helps to formulate revise future goals and objectives and finally make decisions about human, financial and material resources.

5.2 Participatory Monitoring

Monitoring is the regular observation and recording of activities taking place in a project or programme. It is a process of routinely gathering information on all aspects of the project. It involves in giving feedback about the progress of the project to the donors, implementers and beneficiaries of the project. Monitoring is a systematic and continuous process of collecting and analyzing information about the progress of a programme (Boerma J.T. 1991).

According to CEDPA, monitoring is the process of routinely gathering information on all aspects of the project. Participatory Monitoring and Evaluation (M&E) is a

collaborative process that involves Stakeholders at different levels working together to assess a project or policy, and take any Corrective action required. The direct beneficiaries of the project play an active role in monitoring; they maintain records at the community level, analyses progress and use this information to make decisions about project implementation. Monitoring is usually conducted as an ongoing activity throughout the life of a project. The Monitoring was conducted regularly through reports to assess the project progress in line to planned activities and keep the project on schedule.

Monitoring of Objectives;

- i. Determining whether the inputs in the project are adding value.
- ii. Ensuring all activities are carried out properly by the right people and in time;
- iii. Determining whether the way the project is carried out is in line to with the plans.
- iv. Analyzing the situation whether there is occurring challenges in the project implementation and finding solutions.

5.2.1 Monitoring Information System

The following are important issues in monitoring information system.

5.2.1.1 Recording Information

Maintaining records is the first step in developing a monitoring system. Unless there is a regular update on key activities and selected indicators, it is not possible to build a monitoring system. The following issues were considered during the design data

recording system; Unit of analysis information was collected at the individual level.

5.2.1.2 Maintaining of the Record

The mechanism employed for monitoring included, the use of attendance sheets to every meetings conducted. Normally leaders record their names in every meeting or during consultations. Likewise in trainings all participants sign the attendance sheets. Follow up on the agreed activities is made by both the group members. During monitoring, the issue of time was a bit a challenge since most of the group participants were reluctant with time (not observing time during meetings). The training has taken into consideration the fact that other participants they have lower inability of understanding and internalizing the training materials. There are 30 active member groups, but only 27 were able to follow training to the end. The community members are so integrated to each other in such a way that the funerals, celebrations, and festival affect plans and group schedule. For instance the planning training was postponed because of the funerals.

Also the training on diseases had fewer participants compared to other trainings since other went for the funeral. Since most of the implementation take place at the community level data recording starts in the community. The author in collaboration with group leaders was given responsibility for data collection and recording. The group members were provided with note books and dairy to record their own information. The dairy was used to record observations, problems encountered, questions, concerns, suggestions and anything related to poultry project. Project coordinator (author) was his responsibility of collecting the information which will be analyzed at the end.

5.2.1.3 How often Information was Gathered

At community level individuals were collecting data daily while at project level data were monthly collected from the individuals the fact that these groups is used to meet once in a month.

5.2.1.4 Aggregating Information

Data aggregation refers to compiling all of the information on various indicators and activities from all of the households and communities where the project is implemented.

5.2.2 Participatory Monitoring Methods

Monitoring was conducted on monthly basis through different methods such as reviewing of reports, focus group discussion, project visit and observation. The monitoring were carried out for the planned activities which include training on feed formulation, disease and disease vaccination, chicks rearing, housing system, breeding, feeding regime and group dynamics.

5.2.2.1 Methods

The project use participatory approach, in these methods, both the inductive and deductive methods are applied and conclusions drawn. Observation, description, personal study, interview, etc. are put to a qualitative test. Through observation, qualitative observation of events takes place. Through the description and interview method, the experience, emotions and the reactions of the subjects are listened to like a story and certain conclusions drawn on the basis of their narration. In respect of implemented activity 25 Engosengiu Women group member where able to follow,

training from the beginning to the end, also 30 members were observed to feed their chicken with good formulated diet, only 25 members in the group were able to construct good poultry houses.

5.2.3 Participatory Monitoring Plans

The table below summarizes the monitoring plans as per goal, objectives, activities, indicators, data sources, tool applied to collect data, person responsible and the time frame.

Table 5.1 Participatory Monitoring Plan

Plan Objectives	Work plan activities	Monitoring objective	Objective verifiable Indicators	Importance of monitoring	Monitoring information	Person responsible	TIME FRAME
1.To train 30 members for Engosengiu women group on poultry nutrition by February 2014	Preparation of training manual	To have training manual in place	Number of training manual	Having a training tool	Training manual and report	CED student ,consultants	1st week of January
	Training on available resources and feed ingredients	To have farmers who can able to identify resources and feeds ingredients	Number of group members trained	Having farmers who are able to identify feed resources	Training report	CED student ,consultants	2 nd week of January
	Theoretical training on poultry nutrition and determination of nutritional value	Improved poultry diet	Number of group members trained	Having poultry with good nutrition status	Training report, on farmer record	CED student ,consultants	3 rd week of January
2.To train 30 members of Engosengiu women group on disease control and prevention by May 2014	Preparation of learning material	To have training manual in place	Number of group members trained	Having a training tool	Training manual & report	CED students Consultant	1 st week of March
	Theoretical training on types and signs of common poultry disease	To have reduction of mortality rate.	Number of people trained.	Having less mortality rate	Training report	BRAC – foundation and CED students	2 nd week of March
	Training on the control and prevention of livestock diseases.	To have reduction of mortality rate.	Number of people trained.	Having less mortality rate	Training report	ARUSHA CITY COUNCIL and CED students	2 nd week of March
	Training on importance of	To have vaccination	Number of people trained	Having less mortality rate	Training report	ARUSHA CITY	3 rd week of March

Plan Objectives	Work plan activities	Monitoring objective	Objective verifiable Indicators	Importance of monitoring	Monitoring information	Person responsible	TIME FRAME
	vaccination	program				COUNCIL and CED students	
3.To train 30 members of Engosengiu women group trained on indigenous chicken management by June 2014	Training on basic requirements for poultry housing	To have good poultry houses	Number of people trained	Having good poultry houses	Training report	ARUSHA CITY COUNCIL and CED students	Firs 2 weeks of April
	Training on conducting breeding program	To have breeding program	Number of people trained	Breeding program in place	Training report	ARUSHA CITY COUNCIL and CED students	Last 2 weeks of April
	Training on production system, local breeds and performance under different system	To have good system of poultry production	Number of people trained	Adopted production system in the area	Training report	ARUSHA CITY COUNCIL and CED students	June
	Training on baby chicks management	To have management skills in baby chicks management	Number of people trained	Population of chicken increased	Training report	ARUSHA CITY COUNCIL and CED students	June

Source: Project monitoring and evaluation, 2014

5.2.4 Actual Monitoring Results

The actual monitoring plans carried out during the implementation of the project included:

- i. Data recording.
- ii. Case studies.
- iii. Interpretation of the action plan.

5.3 Participatory Evaluation

According to CEDPA (1994), Participatory evaluation refers to the process of evaluation where all project partners, community participants and project staff are involved. In participatory evaluation, all key decisions regulating the evaluation are made by the project partners. These include;

- i. Timing, showing that when to carry out the evaluation.
- ii. Process the indicators and carryout analysis.
- iii. Sharing and reporting and using the findings.

The purpose of this evaluation was to see whether the stated objectives have been achieved in relation to planned activities, to find out the effectiveness of the project, that is, to assess the extent to which things were done as per project plans. Furthermore evaluation was used to inform what to be done in the future as the result of experience and the work which have been done. Two evaluations (Formative and Summative) were conducted within the designated period to the project. Evaluation of the project success was done in reference to the planned schedule and activities.

5.3.1 Performance Indicators

Indicators are quantitative or qualitative criteria for success that enable one to measure or assess achievement of project objective. Feuerstein (1986) distinguished nine common types of indicators which includes its availability, relevance, accessibility, utilization, coverage, quality, effort, efficient and impact. Indicators are also defined as a specific, observable, and measurable characteristic or change that shows the progress a program is making toward achieving a specified outcome. Indicators to measure the success of the objectives were designed from the project inceptions.

The indicators were put into three categories, which include input, output and impact indicators. The indicators were developed in such a way that, it measure changes that can be linked to the project undertaken. The indicators are also defined as a specific, observable, and measurable characteristic or change that shows the progress a program is making toward achieving a specified outcome. Appropriate to measure what is important as well as qualitative and quantitative change. The indicators are targeted in terms of quality, quantity and timing. Input indicators such training, funds used, hand out distributed, consultation meeting were done to Engosengiu women group. The impact of the training was increase in poultry production, existence of poultry project, proper use of management skills acquired (breeding skills, baby chicks rearing, vaccination and housing system. In a process of implementing capacity building project following indicators were evidenced.

i. Input indicators

A total amount of Tanzania shillings 3,199,600 /= were spent in the implementation

of capacity building project to date which include facilitation of training sessions, cost of practical materials such as animal feeds, stationeries, tea and refreshment, payment of facilitator allowance and fuel.

ii. Output indicators

Thirty members of Engosengiu women group were trained and all of them have started practicing the acquired knowledge in different levels.

iii. Impact indicators

The target impact was to increase income of the group members and Sokon Ward community at large, and this will be seen in the future.

Table 5.2: Three Categories of Indicators

Objectives	Input indicators	Outcome indictor	Impact indicator
1.To train 30 members for Engosengiu women group on poultry nutrition by February 2014	<ul style="list-style-type: none"> • Number of training conducted • Type of training conducted • Funds used 	<ul style="list-style-type: none"> • Number of people with skills on poultry husbandry, • People involved 	Increase of income of entire group members
2.To train 30 members of Engosengiu women group on disease control and prevention by May 2014	<ul style="list-style-type: none"> • Number of training conducted • Availability of Hand out • Funds used 	<ul style="list-style-type: none"> • Number of people practicing technology • Number of people with skills on poultry husbandry, • People involved • Decrease in mortality • Increase in egg production per chicken 	Increase of income of entire group members
3.To train 30 members of Engosengiu women group trained on indigenous chicken management by June 2014	<ul style="list-style-type: none"> • Number of training conducted • Number of hand out distributed • Funds used • Number of improved chicken houses 	<ul style="list-style-type: none"> • Number of people with skills in poultry husbandry, People involved • Decrease in mortality • Increase in egg and meat production per chicken 	Increase of income of entire group members

5.3.2 Participatory Evaluation Methods

Participatory method was applied by the CED team. This method enabled assessment of the impact of the exercise to the local community to generate and analyze data relating to their own situations. This method entailed the street development committee to extract and analyze the data and make recommendations to the women group and the street at large and District Council and the host organization. Impact is not yet to be realized but indications show that capacity building on poultry production made a mark and has contributed to the improvement of production status in the community. Also there is clear relationship between no good chicken house and economic capability.

Table 5.3: Evaluation summary Table

Evaluation Questions	Objective	Activity	Direct Indicators	Indirect Indicators	Sources of data	Evaluator
1. Was the project goal and objectives achieved? 2. What other things both positive and negative happened in the community	1.To train 30 members for Engosengu women group on poultry nutrition by February 2014	Preparation of training manual	<ul style="list-style-type: none"> • CBO members, • community leaders participation in the project planning , implementation, monitoring and evaluation 	Eagerness to attend the training and the attitude of the Community ownership of this development project	Farmer's records. Training reports	CED team
		Training on available resources and feed ingredients	<ul style="list-style-type: none"> • Monthly & annual Financial reports • Quarterly and 	Group and community at large acceptance and abide the training manual in implementation of individual project	Farmer's records. Training reports	CED team
		Theoretical		Proper	Farmer's	CED

Evaluation Questions	Objective	Activity	Direct Indicators	Indirect Indicators	Sources of data	Evaluator
		training on poultry nutrition and determination of nutritional value	annual Narrative reports	implementation of the project	records. Training reports	team
		Evaluate and recommend accordingly	Evaluation reports	Good impact to the community	Farmer's records. Training reports	As above
	2.To train 30 members of Engosengu women group on disease control and prevention by May 2014	Preparation of learning material	<ul style="list-style-type: none"> • CBO members, • community leaders participation in the project planning , implementation, monitoring and evaluation • Monthly & annual Financial reports • Quarterly and annual Narrative reports 	Income of Group members and whole entire community increased Proper implementation of the project Good impact to the community	Farmer's records. Training reports	As above
		Theoretical training on types and signs of common poultry disease			Farmer's records. Training reports	As above
		Training on the control and prevention of livestock diseases.			Farmer's records. Training reports	CED team
		Training on importance of vaccination			Farmer's records. Training reports	As above
		Evaluate accordingly			Farmer's records. Training reports	As above
		3.To train 30 members of Engosengu women group trained on indigenous chicken management by June 2014			Training on basic requirements for poultry housing	<ul style="list-style-type: none"> • CBO members, • community leaders participation in the project planning , implementation,
	Training on conducting breeding program		Farmer's records. Training reports	As above		
	Training on production system, local breeds and performance under		Farmer's records. Training reports	As above		

Evaluation Questions	Objective	Activity	Direct Indicators	Indirect Indicators	Sources of data	Evaluator
		different system	monitoring and evaluation <ul style="list-style-type: none"> • Monthly & annual Financial reports Quarterly and annual Narrative reports 			
		Training on baby chicks management			Farmer's records. Training reports	As above
		Evaluate accordingly			Farmer's records. Training reports	

5.3.2.1 Sampling

Purposive sampling method was used as always proved to be useful. In this sampling, also known as judgmental sampling, person who, in judgment about some appropriate characteristics required of the sample members, is relevant to the research topic and easily available to him was chosen. In this technique, some variables are given importance and represent the universe but the selection of units is deliberate and based on prior judgment. Cross sectional sampling in which representative's .from all groups are selected randomly .for instance women 30 member groups 7 were selected filled evaluation forms by help of their children.

5.3.2.2 Evaluation of Reliability and Validity

The validity and reliability of the data collected was checked by using Triangulation type of participatory research method. This is a method of crosschecking qualitative information whereby the information collected in different ways and from different sources and people, by using different tools are made sure that they are reliable and unbiased. Triangulation counteracts the tendency on the part of qualitative methods

to be subjective, unrepresentative and impressionistic. Therefore information gathered from interviews was crosschecked by focus group discussion and structured forms and sometimes way round. Filled forms by selected women were crosschecked during group meeting in which individuals were called and asked some questions to clarify the answers. Most the questions were to put numbers, answers yes or no to make life easy for responders.

5.3.3 Actual monitoring results

Owing to the nature of project and the fact that it is only five months into its implementation certain activities have not been accomplished and as such there is nothing to report in those areas. Impact indicators have not been measured; the report focuses monitoring indicators.

5.3.3.1 Impact indicators

By the end of project, income of Engosengiu women group improved. Data has not been collected to measure changes in the income at the household level. Since the project has been running for only 8 months and impact is expected to be observed in 24 month time.

5.3.3.2 Intermediate results

Objective 1. By the end of February 2014, Engosengiu women group would have trained on poultry nutrition; in February a training attended by 30 of the 30 members was held. The women were given skills in poultry nutrition and encouraged to formulate their own poultry feeds using locally available resources. The training was conducted by CED student assisted by ward extension officer. During evaluation we

found that farmer's records shows an average increase of eggs production relative higher compare to that time before the project. Refers figure 3 bellow.

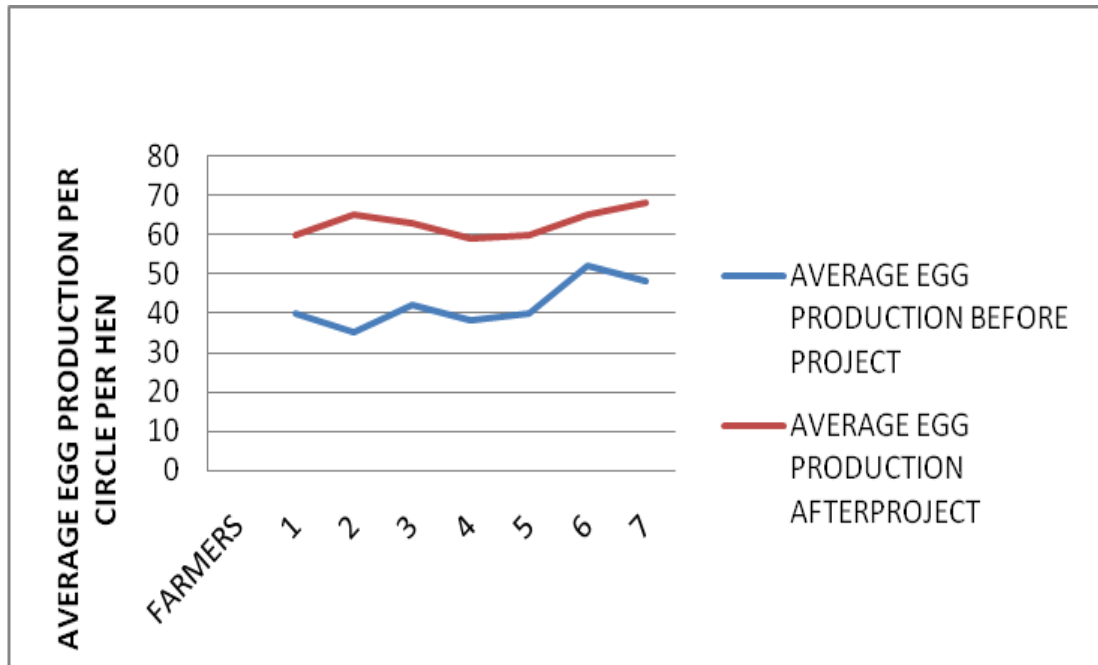


Figure 5.1. Average Egg Productio

Source:Field repport, 2014

Objective 2 By the end of March 2014, 30 members of Engosengi women group trained on sign of different poultry disease and disease control;

In March 2014 training on poultry disease and disease , trained members were encouraged to undertake control measure for poultry diseases, we observe that group members are vaccinating their chicken against New castle disease, poultry keepers records shows that there is a sharp decrease of baby chicks mortality. Figure 4, shows chicks motality before and after the project. There is high proportional of death(chicks) at age of 3 month before the project relative after implementation of the project. In general the result implies that motarlity rate has significantly decreased.

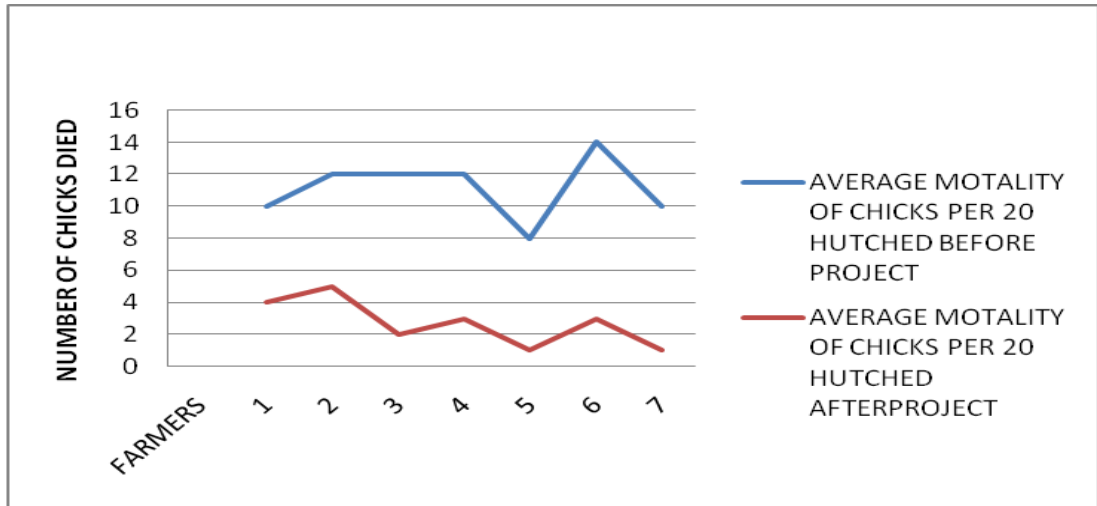


Figure 5.2: Mortality Rate of Chicks

Source; Field report 2014

Also we manage to trace number of member group who are vaccinating their chicken Figure 5.2 shows respondent who vaccinate their chicken before and after project. In general respondents who vaccinated their chicken has increased from 15 before the project to 30 respondents after project. It implies poultry keepers have started to practice principles of disease and disease control by carrying out vaccination.

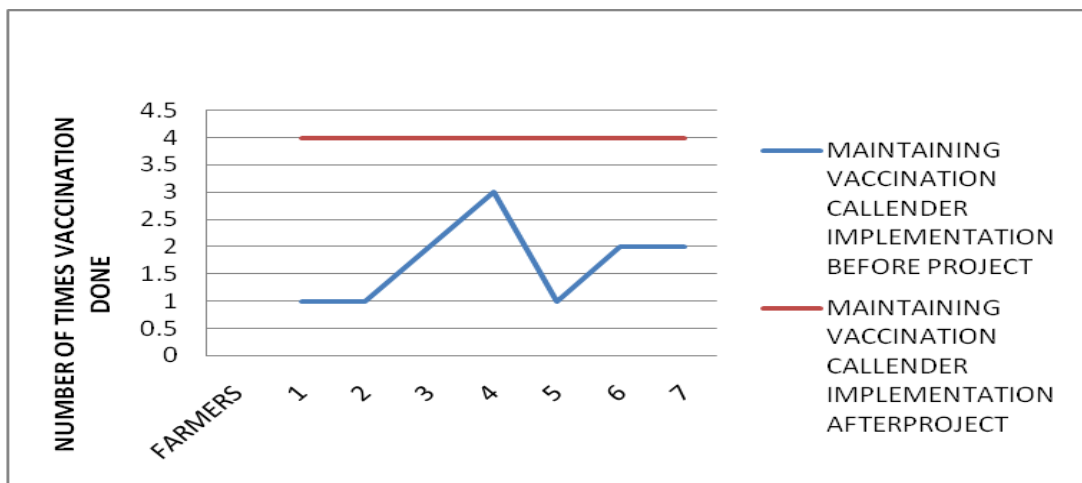


Fig 5.3: Number of Respondents who Vaccinate their Chicken

Source: Field report, 2011

Objective 3: By the end of June 2014, Engosengiu women group trained on poultry breeding as indigenous and cross breeds. In the mid of June 28 of 30 members trained on indigenous chicken breeds and its selection, group members have appreciate the training and poultry keepers records shows that 28 members of Engosengiu group have procured improved cockerels from Oljavutian women group at Sokon 1 Ward to crossbreed their chicken Also field report shows that there is less population of improved crossbreed's chicken which has started to reproduce. Since the project has been running for only six months and the planned breeding training has taken place in three month ago, but also the Filial 1 generation take more time of about six to 9 months to give offspring.

5.4 Sustainability

Sustainability is referred as a characteristic of a process or state that can be maintained at a certain level indefinitely. The project is rooted in the community. It is the community members' initiative through participatory process which led to the existence of the project. The most needed things for the project sustainability is clarity and ownership of goal to the groups' members. So far the group leaders as well as their members are on the top in implementation of the programme to attain the goal. Currently the author will continue to collaborate with group leaders for more encouragement on transparency and accountability. The groups have a potential to network and collaborate with other groups and associations for experience and best practice sharing.

5.4.1 Sustainability Plans

There are concrete steps considered to ensure the sustainability of the project: First step was, developed clear stipulated goal of the project to both Arusha City council extension staff and groups members at Sokon ward, The second step was, building capacity of leaders in leadership skills and group dynamic hence they will be able to enhance mutual understanding among the group members. Third step is the development of the annual operation plan and operational plan acts as the guide and map toward the goal achievement. This means, internal and external resources will be geared to the accomplishment of what was stipulated in their strategic plan. The group Changes, study visits are among the key areas during training as the mechanism to update and equipped group's members with ability to review their plans accordingly.

5.4.2 Economic and Financial Sustainability

The act of contributing funds themselves the group contributed funds through monthly pelages as well through fundraising within their community towards their project is the evidence element of ownership. Unlike the previous time of waiting for donors to propose and lead development initiatives, the group has the base on where to start and progress forward.

5.4.3 Political Sustainability

Tanzania has been experiencing and still experiencing both social and political peace. Community leaders such as street chair person, street executive officer and ward executive officer were well involved from the project inceptions and throughout implementations process. To avoid tensions among the existing political parties within the ward. The project is in line with the key reforms that the

government is pursuing with donor community support such as the macroeconomic and structural Reform. The project fit well within the slogan of KILIMO KWANZA which is now a drive force within the economic development of Tanzania.

5.4.4 Institutional Sustainability

The Arusha municipal council organization has been in front line to ensure what was initiated is coming into reality. As mentioned earlier, the Arusha City council organization is still operation within that community hence they will work hand in hands with groups for goal accomplishment. District agriculture development project coordinator is part and parcel in all training conducted to groups' members at Sokon 1 Ward. The trained groups leaders and members as per evaluation are aware and capable to lead their members to attain their goals.

CHAPTER SIX

6.0 CONCLUSIONS AND RECOMMENDATIONS

6.1 Introduction

This chapter present the conclusion and recommendations of the study and project undertaken in Sokon 1 community.

6.2 Conclusion

The training project on poultry husbandry improvement has made a great impact to both the Engosengiu women group and Sokon 1 community at Large and to the author. The community itself are proud of coming out from darkness after several training conducted. Apart from the experience, the author learned a lot in terms of conducting the community needs assessment, prioritize and develop a problem, implement, monitor and evaluate the community base project. Based on the study and coordination of the developed project, it was realized that, Income improvement at the household level requires careful study, analysis as well as proper continuous capacity building for the poultry project.

In peri urban set up were people are oriented and acquainted with different activities it is importance to have a quality capacity building on proper means of running, otherwise it may take long time than anticipated for benefits realization. Basing on the evaluation conducted to the project at Sokon 1 ward, it shows that, with a guide community members are capable in developing and implementing their own plans. Though at the low level, the study also reveal that community members are willing and potential in contributing financially towards the implementation of their plans. In order for development to be sustainable, it requires not only means but also

advocacy for social and economic issues within the community and other stakeholders such as NGOs, civil societies and the government in large.

6.3 Recommendations

The topics covered during training have enabled the Engosengiu group in Sokon 1 Ward to run their poultry project in a sustainable way. There should be a constant capacity building in relation to any launched project for its sustainability. It is clear that, mobilizing community members to form group for project is one thing and capacity training for skills and means to overcome the challenges is another thing. Both mobilization and training has vital role to contribute for proper management and running of the income generation activities. Improper initiation of the project within the community will not only result in resource waste but also time, energy and moral of the community members will be affected. It will create disaster hence act as the fall block to any innovation. It is good to all community practitioners to make a thorough community assessment needs and ensure that the community members have bought the ideas before embark to any intervention or project initiations.

Challenges are not constant neither static hence group formed within the community they must ensure quality time for reflection and learning from one another to rectify or make a remedy to any emerging problem before it is too late to intervene. There is a need to motivate and facilitate knowledge transfer by study tours, Nanenane exhibition and interaction with other parties or agencies for learning purpose and project sustainability. Livestock and farming are the major interventions which attract investment and exploration in peri urban society. The author suggests that,

communities should be motivated and encouraged to join through groups hence initiate and launch appropriate project within their locality. The project should not be limited to livestock and agriculture but also business should be employed for household income improvement. Poverty cannot be eliminated by one method yet CED approach is vital since it gives the community members the opportunity to participate through ideas, contributions, design, implementation, monitoring and evaluation of their community based project.

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APPENDICES

Appendix I: Checklist Questions; (focus group discussion)

1. How many chicken do you have?
2. Mention the common poultry killer disease in your area
3. Do you conduct any vaccination?
4. Do you sale eggs, chicken
- 5 Have attended any training concerning poultry production
6. Mention other social services that affect your business.
7. Egg production per chicken per circle

Appendix 2: Questioner (Swahili version)

1. Je unashughulika na shughuli ipi ya kiuchumi kati ya hizi?(chagua moja)
 - i. Kilimo cha mboga
 - ii. Ufugaji na kilimo cha mboga
 - iii. Ufugaji
2. Je unajishughulisha na ufugaji gani kati ya hizi.
 - i. Ufugaji wa kuku
 - ii. Ufugaji wa sungura
 - iii. Ufugaji wa ng'ombe wa maziwa
 - iv. Ufugaji wa mbuzi wa maziwa
3. Taja aina ya magonjwa yanayo ua kuku kwa wingi katika mazingira yako ya ufugaji.
 - i.
 - ii.
 - iii.
 - iv.
4. Je ni idadi gani ya kuku unaofuga (chagua moja katika yafuatayo)
 - i. 5 hadi 10
 - ii. 10 hadi 50
 - iii. 50 hadi 100
 - iv. 100 kuendelea
5. Katika ufugaji taja aina ya ufugaji ambao unaona ukifanya utaweza kujikwamua kiuchumi katika mazingira unayoishi (weka vema mahali palipo sahihi)

- i. Kuku
- ii. Mbuzi wa maziwa
- iii. Ng'ombe wa maziwa

6. Je huduma ya afya ya mifugo inapatikana katika mazingira yako

- i. Ndiyo
- ii. Hapana

7. Je huduma za kijamii Kama Barabara,Hospitali,shule na maji zimeridhisha kwa kiwango gani

- i. Inatosheleza
- ii. Inatosheleza kiasi
- iii. Inatosheleza sana
- iv. Huduma ni duni sana

8. Taja vyanzo vitatu vya mapato unayotegemea

- i.
- ii.
- iii.

9. Je unauza mazao yako ya kuku (kuku, mayai, mbolea) katika Jamii yako?

10. Je unafikiri Kiasi cha Ardhi ulichonacho inakutosheleza kuendeshea maisha yako ya kila siku?

- i. Ndiyo
- ii. Hapana

9. Taja misaada unayopata kutoka kwa wadau wa maendeleo katika uendeshaji wa shughuli zako za kiuchumi.

- i.

ii.

iii.

10. Nani kati ya wadau wafuatao ndio watoa huduma katika jamii yenu?

i. Serekali

ii. kanisa

iii. Msikiti

iv. Watu binafsi

Appendix 3; Evaluation form (Swahili version)

IDADIY A KUKU ALIZON AZO AWALI	IDADI YA KUKU ALIZONA ZO SASA	MATUKIO YA VIFO VYA KUKU AWALI KABLA YAN MRADI	MATUKIO YA VIFO VYA KUKU	UZALISHAJI WA MAYAI KWA KUKU KABLA YA MRADI	UZALI SHAJI WA MAYAI KWA KUKU	UCHANIAJI DHIDI YA UGONJWA WA KIDERI	UJENZI WA BANDA BORA	UUZAJI WA MAYAI	UUZAJI WA KUKU	WATUMIAJI WA MBOLEA YA KUKU MASHAMBAN I	MAELE ZO
										NDIYO	MAUZ O NI KWAA JILI YA UNUN UNUZI WA MADA FTARI
										NDIYO	
										NDIYO	
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